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DEVOTED TO
Agriculture, Horticulture, and Rural Economy.

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JULY.

"O happy, if he knew his happy state!
The man who free from business and debate,
Receives his easy food from nature's hand,
And just returns of cultivated land.
No palace with a lofty gate he wants
T' admit the tide of early visitants.

But easy quiet, a secure retreat,
A harmless life that knows not how to cheat,
With home-bred plenty, the rich owner bless,
And rural pleasures crown his happiness."

Work for the Month.

WHEAT HARVEST.

The important work of securing the crop of wheat will demand the attention and care of the farmer, until it is made entirely safe. This should be accomplished at the earliest possible day, for there can be no greater folly than allowing a crop to be lost or damaged, after all the cost and labor of making it.

Whether the grain is put up in shocks or dozens, let it be done by a skillful hand. We think there is less risk of loss in long spells of wet weather in the latter mode of securing it, if well done. It dries off more readily after long rains, and is as safe in other respects. The sheaves must be of moderate size and bound firmly, then set well together, not leaning but perpendicular, and the heads pressed well together, while the cap sheaves are put firmly on.

If the threshing is to be done a few weeks after harvest, much labor will be saved by taking the wheat directly to the threshing machine without stacking or storing. As

owing to the scarcity of labor much of this work will be necessarily postponed to the winter, no care should be spared in putting it early in well constructed stacks, unless there be barn-room enough. In the moist climate of England the grain is considered quite safe in stacks, but they are constructed with a degree of skill which is not often attained among us.

HAY-MAKING.

The crops of timothy and the herds grass or red-top of the low grounds must be secured this month. The curing of grass consists in getting rid as speedily as possible of the surplus water of the grass, without unnecessary exposure to weather. Neither of the grasses named, will, when they are sufficiently matured, require to be long spread in the sun. After a few hours of drying the grass should be thrown into well made cocks until it goes through the sweating process, which, when dried off, leaves it fit for the mow.

As to the point of maturity at which it is proper to harvest timothy we quote the following as a safe guide to the inexperienced: "The proper time to cut herds grass or timothy, is after the seed is formed and in full milk. It will then give about 20 per cent. more weight than when it is just coming into blossom, and the cattle will eat 20 per cent. less, and keep on their flesh. And I prefer also to cut it at that stage of its growth on account of the roots being better able to withstand the drought. It should be cut four inches from the ground, as most of the timothy is killed by mowing close and early, before it

has come to maturity. I have kept timothy thick and strong in the land by following this method. I have noticed that much of it has died out, by once or twice close and early mowing before the grass has come to maturity; if it is dry weather, it is sure to die when so cut. I lost a whole field by mowing too close and early, and I consider four inches at the bottom of coarse timothy of little value."

Red top has the advantage of waiting with a good deal of patience for the scythe and still making good hay. It should be cut, however, before the seed matures if possible, and a point should be made to secure it before the middle of the month on all lands subject to overflow, as we are liable to heavy and sudden falls of rain on the turn of the month.

CORN.

If it should be deemed necessary to work the corn crop again, and the weather be dry and hot, as is very likely, cultivate alternate rows. That is, pass over the field, leaving every other row untouched. By the time the field is gone over in this way, the rows first worked will have recovered in a measure from the damage of having their roots cut, and less injury be done. It is to be hoped, however, that previous workings have left the ground in such order as to need no further work.

TOBACCO.

This is an important season in the growth of the tobacco crop. If it be now well set, the first hoeing should be completed as soon as may be. It consists of a very careful working about the young plants, destroying every sprig of grass, and leaving the surface light and clean. If the weather be very dry and hot, and the surface has become at all hard, very great care will be required, else many plants will be killed by the disturbance of the roots.

Immediately after this working, the plough or shovel should be run, so as to throw the earth from the plants. The second ploughing will throw it back, and the second hoeing will draw a little earth carefully to the plant, and rid the hill of any grass that may have appeared since the first working.

Worms, though not very destructive at this stage of the growth of the tobacco, should be, nevertheless, extirpated. A good flock of turkeys, when the tobacco is small, will keep them in subjection, and if they become at all numerous, these should be driven regularly through the field, morning and evening.

MILLET.

It is time enough still to sow millet or Hungarian grass. If the season be favorable for bringing it up promptly, it will come off the ground in good time for wheat-sowing, and leave it in good condition for that crop. It makes heavy and rapid growth, and requires, therefore, good soil or ample manuring. Two hundred weight to the acre of some good fertilizer should be given it on land of medium quality.

BUCKWHEAT.

This grain should not be sown before the middle of the month. A hundred weight of superphosphate will give a good crop on medium land. It is a good substitute for oats or other grain in feeding stock, and will well supply a deficiency. The fact that a crop may be got so late in the season, gives it importance when other crops have failed.

POTATOES.

The planting of the crop of late potatoes may be still completed in time to make a full yield. The crop which grows chiefly after August, and matures in October, is generally best. The ground must be very thoroughly prepared, and well manured, so that there be no needless delay in the progress of growth after planting.

RUTA BAGA.

This valuable turnip should be sown, at furthest, by the close of the month, if the weather admits. It is needless to do so, if the ground be very dry, and after preparation is made, it will be necessary to wait for moisture enough to ensure the prompt growth of the seed.

A moderate loam, in good condition, is the best soil for the ruta бага, and a liberal use of fertilizing material is necessary to give a maximum crop. But it is very productive, and if a good stand of plants is secured, makes a very large quantity of valuable food to the acre.

OTHER TURNIPS.

It is not well to sow white turnips of any kind sooner than the 10th of August, but the ground should be got in readiness so as not to delay the sowing beyond that time. The purple-top is considered the best for stock, of the white varieties.

STOCK.

Due care of stock at this season requires that if the pastures fail they have supplies of green food, and be regularly salted.

The Vegetable Garden.

JULY.

Growing crops of every sort must be kept free of weeds, and the soil about them in the finest state of cultivation.

Cabbages.—The main crop of cabbages are to be planted this month. If there be no planting season when the plants are fit to be set, let the hills be watered, if practicable.—A little earth, sufficiently wet to allow the roots to be dipped into it, should be in readiness, and the roots of each plant coated before planting. A little care will insure a stand, and the crop be in readiness to profit by the first rain that moistens the earth. Any manure, almost, may be used for cabbages, except what comes from the hog pen. That is said to cause disease.

Celery.—In the course of this month, the principal crop of celery should be set. The most common mode of planting is in trenches; digging the depth of the spade and twelve inches wide, and laying this soil on the space between the trenches, which should be three feet apart. The edges of the trench are then pared down, and two or three inches of fine compost should be thrown in and mixed well with the soil.

Some cultivators maintain that it does equally well planted on the surface. To make it fine and succulent, the soil should be rich and moist.

Previous to planting, trim the tops by cutting off the long straggling leaves, and trimming the roots—leaving the former not more than six inches, and the latter not more than two in length. They should be planted in single rows, four inches apart. Water them when planted, and shade them till they have taken root.

White Turnips.—Sow now a small bed of these for early use, but the main crop not till August.

Cardoon, Endive, Leek.—Plants of these may be set now for main crop in autumn. They may be put out in dry weather, by dipping the roots in mud, as suggested for cabbages.

Beets and Carrots may be still planted, and make good roots.

Mangoes and Cucumbers, for pickling, may be planted now.

Radishes.—Sow seeds the last of the month.

Seed Plants.—Gather all seeds as they ripen,

cutting off the stems and laying them to dry in the shade. As soon as well dried, get them out and put them in paper or cotton bags, and label them properly.

Cauliflowers may now be planted for winter use.

Small Salading should be sown every two weeks for successive crops.

Herbs and Medicinal Plants.—As these come into flower, continue to gather, and dry them in the shade.

The Fruit Garden.

Continue to pick off all punctured fruit, and to gather up such as may fall, to be destroyed with the insects they contain.

Examine budded and grafted trees and rub off any buds that may have started from the stock.

Out off suckers that spring from the roots of choice trees.

The budding and inoculating of Cherries and Plums may be begun this month.

Strawberries should be well cleaned out, and all runners destroyed that are not wanted for plants.

When the Grapes are well set on the vines, keep these constantly tied up in their proper places.

Cultivating Fruit Orchards.

There continues to be considerable difference of opinion as to whether fruit orchards should be cultivated or not. We think the opinion of many experienced cultivators, which have always been our own, and which from time to time has been given in our columns, ought to have weight. We think that young apple or pear orchards can be cultivated with safety for three or four years after setting out in most of the least exhausting vegetables, especially lettuce, beets, cabbage, cucumbers, tomatoes, canteloupes, pumpkins, &c., until the trees reach from two and a half to three inches in diameter, when the ground should be put in meadow grass and remain untouched by the plough ever after, all the manure required being a good top-dressing every other year. We are firmly of the opinion that where fruit trees arrive at a stage when they are able to take care of themselves, they do decidedly better in grass than in anything else, and this grass returns a heavier crop of hay than timothy or clover, and is

also excellent for pasture for both cattle and swine. We have seen hundreds of pear and apple trees of choice varieties so situated, annually loaded with fruit, and the trees in a healthy condition. We have still upon our premises six pear trees believed to be over a hundred years old, standing in sod which has been disturbed only once in fifty years, as we are informed, being in our own possession over twenty-five years—that annually produce heavy crops, and three of them are still in a thrifty condition, each of which yielding good crops of choice pears from grafts inserted in fruit-bearing branches four or five years ago! This would seem to be pretty strong evidence in favor of the non-cultivation of standard pears.

As to dwarf pear and apple trees the treatment is quite different. We cultivate the soil about the same as any portion of the garden for vegetables, applying every fall a good top-dressing of stable manure. If any of our trees grow too rapidly and are disposed to become larger than we wish them, they are root-pruned—that is, the spade is sunk down as deeply as it will go from two and a half to three feet from the stem, and this should be done every spring if necessary.—*Germantown Telegraph.*

The Flower Garden.

Annuals.—Late sown annuals may still be planted into the beds or borders—such as *Balsams*, *Cockscombs*, *Amaranthus*, *China Asters*, &c. Take them up with the utmost care—give them such protection as is practicable, and water occasionally till rooted.

Carnations and Pinks of all kinds should be propagated this month by layers and piping.

Biennial and other Flowering Plants, not heretofore planted, should be now set out six inches apart, in borders, and watered and shaded till they take root. *Sweet Williams*, *Canterbury-bells*, *Wall Flowers*, *Gilliflowers*, and many other old fashioned favourites, should be got. Keep them in such beds until fall, when they should be planted where they are intended to bloom.

Hedges should be clipped this month, in cloudy or rainy weather.

Gravel Walks—keep in order by rolling and sweeping weekly.

Flowering Plants.—Tie up to neat stalks such flowering plants as need support. Cut

off stems of such as are done flowering, unless seed are to be saved. Peg down *Petunias* and *Verbenas* as they continue to grow, taking care not break them. Keep *Chrysanthemums* well watered.

Hyacinths, *Tulips*, and other flowering bulbs, not already taken out of the ground, should be removed immediately, lest they begin to throw out fresh fibres.

Pansies, to flower in the fall, should now be propagated from cuttings of young wood.

Plants growing in baskets and vases are generally elevated, and liable to dry quickly. Keep on the outside a layer of moss to prevent rapid evaporation.

Fuchsias, in pots, should be attended to with strict regularity as to watering and protection, to keep them in perfection.

Geraniums, for bedding next year, should be propagated now, using cuttings of only two or three joints in length.

SHYING HORSES.—L. A. D., in the *Scientific American*, says that a horseman should never “shy” himself, when the horse shies, or show the least nervousness, nor notice it in their horses, and far less to punish them for it, and adds:

Allow me, having had a great deal of experience in managing horses, to add another bit of advice to nervous horsemen. Whenever they notice their horse directing his ears to any point whatever, or indicating the slightest disposition to become afraid, let them, instead of pulling the rein to bring the horse towards the object causing its nervousness, pull it on the other side. This will instantly divert the attention of the horse from the object which is exciting his suspicion, and in ninety-nine cases out of a hundred the horse will pay no more attention to the object from which he will fly away if forcibly driven to it by pulling the wrong rein.

DRESSING MOLE SKINS.—Ten years ago I dressed some mole skins, and had them made into small mats on which to place vases of flowers, &c. Some are still in existence; the fur is as firm on as ever, and fresh-looking. Take the skins, freed from all fat, and stretch them tightly on a piece of board by tacking down the sides. Then, with a very strong solution of alum and water, well rub the skin side, and leave them to dry, repeating the process and drying six or seven times. When dried, cut to the required shape.—*London Field.*

An Essay on Colic and Bots in Horses.

Written for the "American Farmer" by G. H. DADD,
Y. S., Baltimore, Md.

Entered according to Act of Congress, in the year 1868,
in the Clerk's Office of the District Court for
the District of Maryland.

Continued from June number—page 369.

I shall not contend that bots are never found in the abdominal cavity, because I have observed the phenomena very often, but their presence was easily explained from the fact that the stomach in each case was ruptured, either before or after the death of the animal, by gases generated within that organ. The moment a horse dies, his whole body becomes subject to the common law of decomposition, and if he die of flatulent colic, the stomach and intestines are enormously distended, even prior to death, but augment in volume excessively after death, and hence it is not strange that rupture of the stomach should occur. The gastric fluid, that powerful solvent, which during life acted on hay and grain, transforming them (aided by the biliary and pancreatic juices) into chyme and chyle, now becomes morbid and caustic in its character and action, and thus the walls of the stomach are readily acted on and partially dissolved or decomposed. The morbid gastric fluid proves a bane to the occupants of the stomach—the bots—and some of them make their escape through the breach in their citadel and land in the abdominal cavity. Now that death hath set in and the gastric fluid proves annoying to the bots, they probably seek for some means of egress. The peristaltic motion of the intestines, which favors the exit of these parasites at the proper season, has ceased, and they do not attempt its passage; for under the most favorable circumstances it is a long journey—the intestinal tube being about ninety feet in length—but the same energies of instinct pervading and instructing all that live, suggest a means of temporary escape from threatening danger, and yet, after finding their way into their new region of shelter—the abdomen—they may be said to have jumped from the "frying-pan into the fire."

It may happen, sometimes, that bots are involuntarily landed in a cavity foreign to their origin, for when a large number of them swarm or congregate densely at a selected spot on the interior wall of the stomach, that part—in consequence of the multitude of perforations made by their suctorial discs and tentacula—becomes a weak point. Disease

or rupture of the stomach may then occur, and thus the whole swarm may be precipitated into the abdominal cavity.

The stomach, therefore, being the natural habitation of the bot, and the intestinal channel its highway of exit from the body of the horse into the external world, it follows that if these parasites are found within the abdomen, they are there per force of circumstances, for during the period of their minority—the larval state—a term which, in the language of entomology, applies to the bot from the time of its emersion from the egg or "nit" up to that period when it vacates the horse and assumes the form of a gadfly—is in the same condition as a new-born babe or an idiot; the one imbibing its mother's milk, and the other performing unnatural antics, appearing to lack that train of mental operations which implies knowledge, motive, or the consequences resulting from such actions.

Yet, after all, I am led to believe that the bot, in a certain stage of its existence, does manifest those instinctive properties, which are common to many insects and reptiles—a perfect adaptation of means to an end—by which means they perform a special set of operations, producing results which man, through the aid of his superior intellect, has not been able to surpass. So popular has been the belief that bots are always injurious to horses, and therefore must be expelled at all hazards,* that almost all the old works on

* In regard to the destruction of parasites, the most powerful medicines sometimes fail to kill them, but only reduces them to a state of dormant vitality, in which state they may remain unchanged for an unlimited period and yet be capable of reanimation, when the circumstances for this purpose are in operation; and in this particular property the vegetable kingdom does not differ from the animal. Thus the mosses and liverworts which inhabit situations where they are liable to occasional draught, do not suffer from being, to all appearances, completely dead and dried up; but they revive and vegetate when submitted to the action of heat and moisture. There are cases on record in which mosses that have been dried up in a herbarium have been restored, by moisture and heat, to active life. And so of the *Lyopodium of Peru*: when dried up for want of moisture, it contracts its leaves into the form of a ball, apparently quite devoid of animation; it is blown hither and thither by the wind; as soon, however, as it reaches a moist and warm situation, it sends down its roots into the soil, and by aid also of the atmosphere, it unfolds leaves and becomes vitalized. The *Anastaticus* (Rose of Jericho) is the subject of similar revivification—contracting into a ball when dried up by the parching sun, and being detached by the wind from the spot where its slender root had fixed it, is tossed about, finally takes root and germinates. The blue water

farriery contain some favorite recipes as bot exterminators. In order to correct an erroneous impression which had long prevailed in the minds of British husbandmen and students of veterinary medicine, Mr. Percivall thus briefly alludes to the subject: "You may boldly assert that bots are nowise injurious. Still you cannot persuade the world so, and therefore you must be prepared to meet the complaints of those unbelievers, who will now and then declare that their horses have the 'bot disease,' which must be cured. But I know of no medicine that has the power of destroying bots; and even if we possessed such, I am not sure that we could, even when dead, detach them from the cuticular coat of the stomach, to which they are attached by small horns." I cannot, however, exactly agree with Mr. Percivall in his opinion re-

lily of Alexandria grows in the canals; at certain seasons of the year these canals become so dry that their beds are burnt as hard as bricks by the action of the sun, so as to be fit to use as carriage roads; yet the plants do not lose their vitality; for when the water is again admitted, they resume their growth with redoubled vigor. Here then we have a few examples of dormant vitality and resuscitation in the vegetable kingdom; but the same processes occurring in the inferior orders of the animal kingdom are still more astonishing. For example, we learn that the Wheel Animalcule may be reduced to a perfect state of desiccation, and kept in this condition for any length of time, and will immediately revive when moistened. Experiments have been made on the allied tribe Tardigrades, individuals of which have been kept in a vacuum for thirty days with sulphuric acid and chloride of calcium, and yet have not lost their vitality, and in the desiccated condition they may be heated to a temperature of 250 deg. without the destruction of their vitality, although when in full life they cannot sustain a temperature of more than 112 to 115 degrees. Instances are known in which snails and other terrestrial mollusks have been revived after what appeared to be complete desiccation; and the eggs of the slug, when dried by the sun or artificial heat and reduced to minute powder, only visible with the microscope, are found not to have lost their vitality, for when moistened by a shower of rain, they become vitalized, and soon manifest plump proportions; even after being treated nine times in this manner the eggs have been hatched when placed in favorable circumstances; and even eggs in which the embryo was distinctly formed, have survived such treatment without damage. These lowly organized creatures are more capable of resisting acids and heat than the higher orders of creation, for a horse will die when the temperature of his body is raised to about 115 degrees, whereas the bot may be dipped into boiling water and strong acid, and still survive the scalding and scorching. It has been asserted, also, that entozoa inhabiting the body of fish have been, after being boiled, found alive; hence the difficulty encountered and the danger attendant thereon in making attempts to destroy bots, when residents of a horse's stomach.

garding the complete innocuousness of bots, for I once examined a case in which the bots had all congregated in the region of the cardiac orifice of the stomach, so as to detain food in the esophagus; it there became impacted, so as to kill the horse by choking; nearly two hundred bots, in a dense cluster, were found, and they had completely blocked up the entrance into the stomach. A few hours previous to the death of the horse the owner had given him a ball composed of six drachms of aloes and two drachms of tartarized antimony. This powerful dose—a compound of medicine and poison—may have so operated as to irritate the bots and excite in them a spirit of revenge, and thus they swarmed at the point of entrance into the stomach, forming an effectual barrier against any further annoyance. Other cases of like character, which have lately come under my own observation, has modified an opinion formerly entertained by me, regarding the harmless nature of bots, and I now believe that all parasites infesting the bodies of men and animals are, at times, and under certain circumstances, causes of disease and death.

The parasites alluded to in this essay, and many others not mentioned, may be classed as so many diseases, which, perhaps, never prove mortal unless the individual or animal's lease of life is about expiring, in consequence of an hereditary or acquired defect in the organism. Thus nature disposes of those, which if suffered to live and propagate, would only libel her handiwork, and at the same time she prevents a two rapid multiplication of the various species of men and animals.

It seems to be ordained that men and animals should be subjected to struggles for life and health; disease and parasites are the ordained agents which the vital powers must necessarily encounter and battle against, and it is only such men and animals having a robust constitution that are capable of passing safely through the ordeal; all others die prematurely, or, rather, their lease of life is foreclosed.—Health does not come of good luck; it is inherited by predisposition—lurks in breed—yet its enjoyment depends a good deal on the efforts that are made to obtain and perpetuate it. Some there are that never inherit this predisposition, but the converse obtains—in which case, disease and parasites are potent causes of early death, by virtue of idiosyncrasy; and a skillful physiologist can very

correctly predict the mode of death to which men and animals, by virtue of their constitution, are liable. Of course, accidental deaths are to be excluded from this category.

Some men, however, although they inherit a long lease of life—are perfect in structure and function—disregard the laws of physiology and plunge into the sea of dissipation and licentiousness regardless of consequences. They thus become the subjects of unnecessary disease and parasites, (including the tape-worm and trichinae.) These torment them, and their punishment is an early death.

The same is true of horses; an animal may inherit a faultless constitution, endowed with immense vital powers, but being subjected to the well known evils of domestication, the ordinary equilibrium of health is disturbed—then disease afflicts them, too, severely, and parasites torment them unceasingly, and they soon go the way of all horse-flesh.

Hence, under certain circumstances, bots may (according to our ideas) prove injurious, but, under more favorable circumstances, the parasites may nestle in the stomach for a long period, apparently harmless, so that the infested horse may not suffer any serious inconvenience or deterioration of health, but may work and trot along through the journey of life just as long as horse-flesh is worth wearing, and simply because the animal has a vigorous constitution, which is capable of successfully resisting all encroachments on it.

Parasites, like other diseases, select their subjects; they pounce on those men and animals not in *rapport* with nature; that have no legitimate right to enjoy good health and long life. "No Prince ever died of the plague." A well curried horse, having a clean skin, is never troubled with the itch parasite; transplant an itch parasite on the skin of a clean and healthy horse, and it dies for want of sustenance; filth is its food; it lives and flourishes on the excrementitious garbage which accumulates on the bodies of horses whose skins rarely make the acquaintance of either brush or curry-comb. Parasites, when they have no other work to perform, act as nature's scavengers; those located in the intestinal tube devour what the glutton fails to digest. They thus rid his system of that which might otherwise prove injurious. Here we perceive the usefulness of the dreaded and much abused worms, and as regards bots, some authors contend that they are rather useful than other-

wise—that the rough exterior of their bodies coming in contact with the inner coat of the horse's stomach, excites the gastric secretion, and thus aids digestion. All parasites—including bots—were not created in vain; they have, in the realm of nature, a mission assigned them to perform. I am not able to completely raise the curtain and expose the secrets of nature wrapped up in the organism of parasites, but have furnished the reader of this essay about all I know on the subject, leaving it for others better qualified to perfect our knowledge on so important a subject.—Mr. Youatt informs us that there are several plain conclusions to be drawn from the history of bots. "They cannot, while they inhabit the stomach of the horse, give the animal any pain, for they are fastened to the cuticular or insensible coat of the stomach. They cannot stimulate the stomach and increase its digestive power, for they are not on the digestive part of that organ. They cannot by their roughness assist the trituration or rubbing down of the food, for no such office is performed in that part of the stomach—the food is softened by the gastric fluids, and not rubbed down. They cannot be injurious to the horse, for he enjoys the most perfect health when the cuticular part of the stomach is filled with them, and their presence is not even suspected until they appear at the anus. They cannot be removed by medicine,* because they are not in that part of the stomach to which medicine is usually conveyed; and if they were, their mouths are too deeply buried in the mucous membrane for any medicine, that can be safely administered, to affect them; and last of all, in due course of time they detach themselves and come away.—Therefore the wise man will leave them to

* I once had a horse under treatment for pneumonia, and one night, during the progress of the malady, he voided about fifty bots with the fecal matter; the owner of the animal then declared that he suspected the presence of bots in the stomach, and now the horse was sure to get well; but, contrary to the prognostication, my patient died. The autopsy revealed his lungs in a complete state of carnification and consolidation. It happened, however, that the stomach still contained about seventy bots, and my employer contended, and does up to the present time believe that his horse died of the bots, although any intelligent man could see that the lungs were impervious to atmosphere—hence incapable of vitalising the blood—so that, in popular language, the horse "died for want of breath." But as I could not succeed in convincing the man of this fact, I concluded, as the saying is, that he had "bots on the brain."

themselves, or content himself with picking them off when they collect under the tail and there annoy the animal." Boardley, in his book on Husbandry, tells us that while he occupied a certain farm his horses were universally afflicted with bots—(it is to be presumed that the aspect may have been a northern and a shady one, with a stiff and cold soil, cold springs of water, &c.)—but when he removed to a farm on a tide river, where at high water the horses drank the brackish fluid, the bots immediately disappeared* in his horses, and about one-half the disorders of his cattle, with their consequent staring coats, were never more heard of—which must have made a difference in his balance-sheet, for of all the plagues of a farmer's life, there is none that can compare with the necessity of incessantly physicking, purging and bleeding.

(Concluded in our next.)

Phosphates and Superphosphates.

Editors of American Farmer:

GENTLEMEN: Allow me by this communication to enquire of some of your intelligent and *practical* correspondents their experience in the use of both phosphates and superphosphates as manures for corn, in comparison with *leached* wood ashes or Jersey green sand marl—both of which (I suppose) act upon the same principle. I do not mean unleached wood ashes, but *leached* ashes, as I suppose that it is not the potash that produces the remarkable effect referred to, (and which I wish to illustrate hereafter.) I do not want the opinion of abstract chemists as to this point, but *practical* agriculturists. The theories now advanced with regard to the nutrition of corn and rapidly growing plants or spring crops are false and unreliable, judging from *repeated* practical application thereof during the past twenty years. I do not expect any one to spend one-seventh part of the time or personal labor in making these tests of the relative value of *leached* ashes and phosphatic fertilizers that I have devoted to the subject. My plan has been to apply the several manures to a number of hills of corn sufficient to produce one shock—then cut and shock the corn at maturity, before the crop was gathered. Subsequently weigh the ears of corn, allowing seventy pounds to the bushel.

* He probably meant to say that colic disappeared.

In gathering the corn, I find it better to exclude all hills that do not contain two stalks, and also omit all replanted hills, these being immature or green. The "green sand" or Jersey marl occurs in Delaware, Maryland, and other localities, and its substitute may be obtained at any farm house, or manufactured in unlimited quantities, using the green sand as the basis, which is too ponderous for extensive use, unless thus concentrated. Nevertheless I used it as late as the middle of June last year, and it excelled a number of the best standard phosphates and other fertilizers that sell at ten times the price. These very phosphates, on the very same fields, produced better results on wheat, and must be preferred therefore to any alkaline dressing, (as I have clearly demonstrated in the February number of this journal, page 249. Compare D, No. 5 with B, No. 3.)

Ten or twelve years since a manufacturer of one of the best varieties of phosphates presented me with a bag for experiment, and my gardener applied it in my presence to part of a field of corn, as above—well cultivated and then growing uniformly—but no perceptible difference resulted in the weight of the ears of corn, although shock after shock was tried, comparing this and other phosphatic fertilizers with unmanured shocks. I do not wish to convey the idea that I have never derived benefit from phosphatic fertilizers on corn, but I am impressed with the idea, from abundant experience, that in proportion to their purity they are worthless *for corn*, whether phosphate or superphosphate. The fact that a *compound* phosphatic fertilizer improves the crop is not questioned.

It has long been with me an axiom that any special manure, however valuable in any locality, may (*by frequent use*) be supplanted by another, although much less valuable elsewhere. As an illustration of this idea, see the article in February number, referred to—but there are other reasons why the ashes of corn do not indicate its nutriment as they do in the case of wheat.

DAVID STEWART, M. D.

Port Penn, Delaware, May 3, 1868.

Philanthropists have discovered that the hog is a cleanly, not a filthy animal; that he loves nothing so much as to be neat, and that his squealing is an evidence of nervous irritability, the same as in poets.

Mares and Colts.

An Essay read before the Concord (Mass.) Farmers' Club, Nov. 14, 1867.

BY HON. JOHN S. KEYES, OF CONCORD.

At what age and in what condition are mares best suited for breeding? How should they be treated during gestation? What is the best management of colts until they are three years old?

Breeding is a science of which but little is known, and that little but poorly practiced. Most of it is done in a loose way, without much attention to anything but convenience, and the results are what might be expected—uncertain and profitless. When proper care and attention is bestowed, animals may be bred almost to order, and among the large and experienced breeders in Vermont, New Hampshire and Maine, colts of almost any size, shape, color and qualities are raised as wanted. Of course this requires a knowledge of the science, a care for every detail, and an expense in the selection of the stock that are alone consistent with making this a business, and following it as any business must be pursued, to make it a success.

For our purpose in this discussion, three questions are to be answered, and all others need not *now* be considered. To the first—the best age and condition of the mare for breeding—there is but one reply: in the prime of her years and finest order. But to this reply, there are many limitations of cost, profit and convenience, which will materially modify the answer, according to the circumstances of each case. For farmers who wish only to raise a colt occasionally, either for their own use or for sale, we must be governed by the convenience to our work and the cost of the trial. We cannot take the family mare from her work of all kinds on the farm, and give up the use for nearly if not quite the whole season, to get a foal, without supplying the place at an expense not warranted by the profit. If she gets injured by an accident, or used up by many seasons of hard work, we are too apt to put her to breeding, as the best use that can be made of her, though there is more certainty of getting poor stock in that way than of profit. But we can do this, and it is, under all the conditions, the best plan: let that filly have a foal before she is put to work. This is the real secret of successful, pecuniary result in breeding horses. Every filly breeds before working in all those sec-

tions where raising colts is followed. It is the best time, in my judgment, at from three to four years old, depending on the size and maturity of the animal. It saves them from being worked at too young and tender age; and it imparts to the offspring all the vigor the mother naturally possesses, unimpaired by any of the hardships or strains she may undergo in work. It develops her own frame and bodily powers, and, if well kept before and during gestation, with no injurious results. Such a filly that had been kept growing her first three years, without stint of good, nutritious food, with great freedom of range in the pasture, and roomy, well ventilated stalls, and moderate exercise during the winter, if put to a horse in the prime of his powers, say from seven to twelve years old, could not fail of bringing as good a colt as she ever would produce from that horse at any age. Indeed, I believe a better, or one that I would rather take my chances with, than of any born later in life, after the mare had worked even on a farm, to say nothing of stable or city use. The colt then would be weaned and the mare ready for breaking and use at from four to five years old, and be worth more than if she had never bred, besides paying all her keeping to that age, with the one good colt thus raised.

As to the second question: mares should be treated during gestation as naturally as possible, whether by this is meant either the actual time of birth or the whole period of bearing. Their work should never be severe or long continued, and their keeping such as would supply both mare and foal with ample nourishment. Too high condition might not be better than moderate order, but it would be vastly preferable to any stinting or scanty fare. In the event of breeding at the earlier age, three or four years old, they should be at pasture all the season would permit, and in the winter should have no work, only moderate exercise, to keep them growing constantly.

Breeding later in life, after the mare has been worked, she should be kept at grass as long as possible, and, if required to work, great care should be taken to prevent any over-work, or undue exposure, and the feed should be liberal, to support not only the mare but the foal. With care and good treatment, the colt may not suffer or be any the worse for the use of the mare during the earlier

stages of pregnancy, but no such tax as hard work and breeding can be imposed on any animal without injury. For some time before the birth, she should be at pasture, if possible, and if not, should have a box stall and a yard for exercise, and entire freedom from restraint in the motions, by tying, &c. Generally speaking, no other or peculiar care is required than nature gives the mare the instinct to seek for herself, though if we artificially interfere with this instinct, we ought to provide as nearly as may be the natural conditions of the animal.

Third. The foal being born, for a few weeks needs no care but the mother's, though, if it is accustomed to being handled and caressed from the very first, it will be easier to break. It is well, too, to let the colt accompany the mare in the light work she may do while nursing, as it thereby gets accustomed to the objects that it is to be familiar with afterwards, and to learn more early the great lesson of obedience. Good pasturage for the mare, and freedom, are the best for both, as it is the most natural. As soon as weaned, and when conveniently situated, even earlier, the colt should be broken to the halter and taught daily, with patience and gentleness, some of the many lessons it has got to learn. Too much care and kindness cannot be used, and the great majority of the faults of horses are the results of faults of the owner in breaking. Good feed sufficient to keep the colt steadily growing, rowen, roots, and green fodder, with but little grain, where these can be obtained, are the best.

The different processes in biting, harnessing and accustoming the colt to vehicles and use, should be gradually, but steadily pursued, and above all things it should never be frightened or allowed to break away from control. The more of this that is accomplished the first year, the easier and the better it will be. The same management should be followed the second year. As fast as size and strength will permit, more attention should be given to what is too much neglected, the paces. These can be taught in the second year better, perhaps, than any other time, and a wonderful change can be made in the walk, trot, canter or gallop of a colt, if proper care and attention is used. Natural defects cannot be wholly overcome, but almost as much may be gained in these as in other particulars by thorough and systematic training. This is a matter too

much neglected, and many a horse has a very uncomfortable gait all his life from want of training. He can neither walk without breaking into a trot, nor trot without breaking into a canter, and if urged, or if left to himself, mixes up these different paces, to the great annoyance of the driver. The great rule to be observed in this training is, to keep the several paces entirely distinct. When training, the walk should be first practiced, and this should be made as rapid as possible, without breaking. He should first be permitted to trot a few steps and then walk. And when he has learned to walk well and rapidly for his size and figure, trotting should be attended to, and in trotting, the same rule should be carefully observed. Keep him trotting while the lesson lasts, and never allow him to slack into a walk any more than to break into a canter. There is nothing gained by being in a hurry to make the colt show speed in trotting. Patient training, without anxiety on the point of speed, will make a much faster horse than over urging at first. Still a colt should (after being taught to walk fast and trot steadily) be occasionally pushed to his speed in trotting. This should be done for only a very short distance at first, while it may be gradually increased as the power and stamina of the animal increase. If it is desired to fit him for use under the saddle—a practice that has increased immensely since the war—he should be taught as soon as he can bear a light weight on his back, (not too young, for fear of injury,) the best saddle gait, in the same way as the other paces. And as before, and always, the greatest pains to be taken to keep these distinct from each other.

Although a colt should be thus broken, handled, driven and ridden before three years old, still too much care cannot be used to prevent over-exertion, and permanent injury therefrom. Two or three miles a day, with a light carriage, is the outside work such a colt ought to do; and as this is so generally done in the village or neighborhood, if not always thought about, the distance is very apt to be exceeded before the driver is aware. Of course, while thus training, attention should be paid to the habits of stopping at the word, and not starting till the signal is given; of how much weight should be borne on the bit, and of all the other things which go to make up a pleasant driver.

As I said at first, if a filly at three years

old, I would breed from her and raise a colt, suspending the training and using during so much of the time as would be likely to interfere with the growth of the fetus and parturition, and the first weeks of nursing.

I have thus given my best answer to three questions. I shall be satisfied if they provoke criticism or elicit discussion, and thus set me and the other members to adopting the right course.—*American Stock Journal.*

The Nature and Value of Birds.

We have latterly printed considerably on the subject of birds, and in their behalf; still, we cannot refrain from speaking a good word for them whenever an opportunity presents. We do not know the source of the following notice, but it is philanthropic, valuable and interesting, and we give place to it with great satisfaction, hoping that it will be read by every one, and induce all to unite the present season in protecting the birds upon their premises, and when necessary cause the "bird law" to be rigidly enforced against every violator. It must be remembered that a person in shooting insectivorous birds, not only subjects himself to this law, but is also liable to be prosecuted for trespass.

Summer is approaching, and with its pleasures will come the daily nuisance to those who dwell amid rural scenes, of the hearing the "soft notes of the shot gun." Every one who has paid attention to the matter, knows that the vast increase of late years of destructive insects, is owing almost entirely to the wanton destruction of birds which are not even legitimate game.

In Japan the birds are regarded as sacred, and never, under any pretence, are they permitted to be destroyed. During the stay of the expedition at Japan a number of officers started on a gunning excursion. No sooner did the people observe the cruel slaughtering of their favorites than a number of them waited upon the Commodore, and remonstrated against the conduct of the officers. There was no more bird shooting in Japan by American officers after that; and when the treaty between the two countries was concluded, one express condition of it was that the birds should be protected. What a commentary upon the inhuman practice of our people, who indiscriminately shoot everything in the form of a bird which has the misfortune to come within the reach of their murderous weapons.

On the top of the tombstones in Japan a small cavity or trough is chiseled, which the priests every morning fill with fresh water for the use of the birds. Enlightened America should imitate these customs of the barbarous Japanese, if not by providing fresh water for the feathered warblers, at least by protecting them from the worthless louts who so ruthlessly destroy them. Unless something is done, and that speedily, our insectivorous birds will be wholly exterminated, and then farewell to fruit-growing.

The swallows are the natural enemies of the swarming insects, living almost entirely upon them, taking their food upon the wing. The common martin devours great quantities of wasps, beetles and goldsmiths. A single bird will devour five thousand butterflies in a week. The moral of this is, that the husbandman should cultivate the society of swallows and martins about his land and buildings.

The sparrows and wrens feed upon the crawling insects which lurk within the buds, foliage and flowers of plants. The wrens are pugnacious, and a little box in a cherry tree will soon be appropriated by them, and they will drive away other birds that feed upon the fruit, a hint that cherry-growers should remember and act upon.

The thrushes, blue-birds, jays and crows prey upon butterflies, grasshoppers, crickets, locusts, and the larger beetles. A single family of jays will consume 20,000 of these in a season of three months.

The woodpeckers are armed with a stout, long bill, to penetrate the wood of trees, where the borers deposit their larvæ. They live almost entirely upon these worms:

For the insects that come abroad only during the night, nature has provided a check in the nocturnal barn owl, which take their food upon the wing.

How wonderful is this provision, of Providence for the restraint of depredators that live upon the labors of man, and how careful we should be not to dispute that beneficial law of compensation by which all things are preserved in their just relation and proportion.—*Germanstown Telegraph.*

☞ In Chicago and other western cities, the new business of planting forest trees has been started, and it is profitable. Elm and other trees, six inches in diameter, are planted and warranted to grow, for \$50.

Deep Culture.

This subject has recently attracted some attention, and is still in season. That a deep rich soil is most desirable, is generally admitted, while no one objects to any good soil as being too deep. All admire rich intervalles and river bottoms; and while some may be from ten to twenty feet deep, no one objects to them on that account. But undoubted as are the advantages of such deep rich soils, but few farmers try to combine these advantages in the cultivation of their farms. Speak of deep ploughing, and there is far more thought and ingenuity manifested in giving reasons and excuses for not adopting deep culture, than is discovered in any efforts to test the question. Yet these reasons and excuses do not show that a deep soil is not the best, but that deep ploughing cannot be practiced, as it is supposed, to good advantage on their farms—that it won't pay. That this is a wrong opinion, must be understood, in order to adopt and practice improved farming to the best advantage.

While deep ploughing may not be best on loose sands and gravels, there is little doubt that it is best for nearly all cultivated land where the subsoil is harder and heavier, but can be ploughed. Where it is a hardpan, that is very difficult to plough, in poor sections remote from market, it may not pay. Subsoils that can be worked may be divided into two kinds—one in which the subsoil is as good as the surface soil, and where improvement results from mixing both together; and the other where the subsoil is poor, and when ploughed up on (or mixed with) the surface soil, must be manured. The subsoils of Western New York are generally of the former character; they appear to be rich in plant food, and only require a few months' exposure to the sun and air, with suitable cultivation, to put them in good condition for crops. And I believe this is the case in most sections, although farmers are not aware of the fact.

Dr. Voelcker of England, (Mark Lane Express, Feb. 19, 1866,) has "examined a great many subsoils, as well as surface soils, and the general conclusion he has arrived at is this, that, speaking generally, the subsoil contains vastly more mineral elements of fertility than the surface soils, and for the simple reason that the plants do not go into the subsoil, on account of its bad physical condition; and that they exhaust the surface soil." He has

"analyzed a great many subsoils and found them full of food—of all the mineral elements, * * *—plenty of potash, plenty of phosphoric acid, and frequently lime—where none is to be found in the surface soil;" and that these "elements lay there as dead capital locked up. Nevertheless, it is upon this capital that the farmer must draw, and may draw, without running the risk of permanently exhausting the land. All that has been said about permanent exhaustion of clay land is mere nonsense. You may, if you have a good subsoil, plough it up; and the more you work it * * * the more plant food it will yield. It is the surface, and not the subsoil, that requires manuring. It is the subsoil that requires the admission of air, mechanical working, and the development of the mineral riches that are contained in it." Dr. Voelcker also speaks of the "wonderful efficacy" of the steam plough, "in developing the natural resources of fertility in the soil;" and that, "seeing what takes place when we cultivate stiff clay soils, I think we have, in the very excellent result which follows steam cultivation, the most evident proof that many subsoils are not so poor in mineral elements of fertility as Baron Liebig has said, but are very rich in them. Free admission of air and mechanical working unquestionably will develop the natural sources of fertility, which for centuries have lain in a dormant condition." It is also shown that "this dead capital is now utilized to some extent;" and that the natural sources of fertility will be still more developed, and the benefits of deep cultivation become more generally known. I have thus largely quoted from Dr. Voelcker, because he so plainly shows the great amount of plant food in the subsoil, and that it can only be secured by deep ploughing, which is meant by steam ploughing.

While these remarks are especially adapted to this region, as repeated trials have proved that deep ploughing, when well managed, always gave the best crops, I will add another excellent authority, showing that while this is true in the wheat section, it may be true in the eastern part of the State also. In 1860 John Johnston gave an account (Co. Gent., Dec. 20,) of a visit to the farm of C. S. Wainwright, in which is noticed "the more luxuriant clover and grass right over the drains." He says it is not because it is dryer, "as thorough drained land is just as dry in the centre

between the ditches, as over the drain. The cause of the more luxuriant growth of the grass or grain over the drains, is the mixture of the subsoil and soil to the depth of $2\frac{1}{2}$ to 4 feet; and if Mr. W.'s land, and my land, and thousands of other men's land, could all be cultivated as deep as our drains are, they would all bear just as luxuriant crops as that over the drains." "I have drains that have been made from 16 to 18 years, and when in crop or meadow they can be traced as plainly as if they were lying open." Also, that "horses, cattle or sheep" eat the grass much closer over the drains, as it is sweeter and more nutritious, and stock like it better. Mr. J. also says: "I have been trying for some years to plough a foot deep. Even that makes a wonderful improvement in grain and grass."

But I need not quote farther. To the highest scientific authority is added the practical experience and observation of one of the best farmers and observers in this or any other country. Both show the great advantages of deep cultivation in all soils having a good subsoil, as well as that such subsoils much more generally prevail than farmers are aware of. To these accounts I might add the experience or experiments of many farmers in this section, but it would only show that the above accounts are verified in many other cases.—But no better authority can or need be had than that already given. It only remains to consider subsoils that are said to be poor, and are expected to result in more or less damage when turned on top, or mixed with the surface soil.

As such poor subsoils are said to add but little to the fertility of the soil, the most general conclusion is that it won't pay to do much with them. But a more thorough consideration shows that a deep, mellow soil is needed—if rich also, of course it is still better. But there is no subsoil so poor that it will not add something to the surface soil, and it is seldom that one is found that will not add largely, and if the surface soil is much run, and the subsoil is worked deeply, will not double the available mineral plant food.

The original forest ought to afford some indication of the value of the subsoil; as a good growth shows strength in the soil, so, if the roots run deep, the subsoil ought to be good also. Not that it is as rich in available food as the surface, for the decay of leaves and plants has enriched that for untold cen-

uries, but where the virginal fertility is getting exhausted, the easiest and cheapest resource is in the subsoil. And the fact that trees send their roots deep in search of needed supplies, suggests the use of deep rooted plants, like clover, for the same purpose. Not that such plants will alone be sufficient.—Deeper ploughing is needed to enable clover roots to find mineral plant food to the best advantage. While both do best when used together; the clover roots to loosen the soil and put it in better condition to plough, and deep ploughing to open the way for the clover roots to go still deeper; while both let in the air, warmth and rains, which render available the mineral elements previously locked up in the cold, hard subsoil. True a large increase in the depth of the cultivated soil may require an addition of vegetable matter. But this is only the case where the surface soil is deficient in vegetable mould, and several inches of the subsoil is brought up at one time. But it is best to only bring up from one to two inches at a time. Let this be done when breaking up summer fallow in June, or in fall ploughing, and have it thoroughly mixed with the surface soil by subsequent cultivation; and, unless the soil is poor, there will be no extra demand for vegetable matter. Where it is needed, and there is not sufficient barnyard manure, a crop of clover or buckwheat may be turned under. But in good farming, the cases must be rare where a moderate top dressing of fine manure before sowing and a good seeding to clover will put the soil in good condition.

True, deep cultivation implies dry land, or thorough draining, if needed. But all land dry enough for grain does much the best when a deep mellow soil is secured. It is not so soon filled with water in a wet time, and will hold a great deal of moisture in dry weather; besides having a much greater tendency to bring up water by capillary attraction—the subsoil does not so soon become dry and hard, and stop the rise of moisture from below.—

Cor. Country Gentleman:

—♦♦♦—
TO KILL THE CURRANT AND GOOSEBERRY WORM.—Dissolve one pound of copperas in a gallon of hot water, add four gallons cold water; after stirring well apply to the bushes with a sprinkling-pot, by showering. I tried it last and this year with success.—*Ex.*

Deep and Thorough Culture.

In all the processes of culture, the first and most prominent is the deep and thorough pulverization of the soil, or, in plain terms, deep ploughing and thorough harrowing. In the absence of this preparation we have no assurance of a full crop. "Not so fast," says our friend Stockdown, "for when I came into the country thirty years ago, shallow ploughing made us good crops, much better than we can have now with all your new fangled notions. The fact is, the land is wearing out, and you must seed down and let it recover, and then turn up the sod, and you will be able to grow wheat and corn again. The land is worn out—I say worn out—and it must be seeded down."

We do not propose to admit any such fact—that our land is worn out, but that the hygrometric change of the atmosphere has wrought a new condition of things, to which we must conform.

Pasturing and ploughing have been the means of drying the soil, and to enable it to hold the required amount of moisture, it must be deepened; that is all there is of it. Shallow culture did very well when the air was so saturated with moisture that the nightly dews were like a small shower. We might, with the same propriety, tell our friend Stockdown that the heavens were worn out, for they no longer give us the supply of dews that we were accustomed to. If we will plough deep and finely commute the soil, so that the rain will pass down through it, and thus retain the gases that are held in solution in the rain drops, we shall not only enrich the soil, but we shall have an ample supply of moisture for our crops. It is said that the soil is drying out. Most certainly it is, and for this reason we must stir it more often, so as to admit the air. The dews and rain moisten the surface, and form a thin crust, which excludes the air. This crust must be broken often if we would have the plants make rapid growth. Suppose we have a field of winter wheat, on which the winter rains have soddened the soil, we put on a harrow and stir the surface, and at the same time destroy a portion of the plants with the teeth of the harrow; yet the advantage is on the side of the crop. The same is true of spring wheat and oats; in fact, all the small grains.

We see it stated that in England the wheat crop is double that of ours; and yet very few

of our farmers are aware that in England the land is deeply tilled; that the seed is planted in drills, and that the crop receives repeated weedings and hoeings, in which the steel rakes act a prominent part. When labor becomes cheaper, or wheat dearer, or when experience shall have demonstrated that this hand-weeding and hoeing is profitable, then shall we also double the average of our wheat crop as certainly as do the wheat-growers of England. Cheap labor and dear wheat are potent powers to develop good culture.

Three horses are better than two to plough our corn fields, and we trust the experiment will be tried on the corn crop at least.

The ploughing into lands of about three rods wide is another cheap method of correcting the dryness and the resulting heavy rains; for we all know that any long dry spells often come to an end by a small flood, which in turn saturates the soil and stagnates the roots of the grains, trees and vegetables. A few ploughings towards the centre raise the bed and make a deep dead furrow, and thus imperceptibly increase the depth of the tillage.

If we look at the grain along the centre of the land that we have back-furrowed, we see there the best grain, the longest heads, and the tallest straw; and yet the soil has not been deepened so much as drained. But, says one, why not the drain? Simply for the want of cash, labor and experience. But we can accomplish much with the plough, and these seed beds cost us nothing extra. The dead furrows are not filled with water, simply for the reason that the deep tillage has enabled the soil to hold the heavy rain, like a sponge, and it sinks deeply, and in time comes back by capillary attraction.—*Saturday Courier*.

BRICK CLAY.—Pure brick clay, after being submitted to the action of the frost, is said to be one of the best materials for the compost heap, and for top-dressing is better than leaf mold or sod. Its excellence consists in its absorbent power, by which it takes up and retains for a long time all the enriching qualities of the compost heap.

A thin coating of this clay, fresh from the bank, spread on the grass in the fall, is said to be almost equal, in its effect, to that of a coating of well rotted manure, especially on a light soil.—*Es*.

Hog Raising in the South.

A correspondent of the *Farmers' Home Journal*, of Lexington, gives the following as to his experience in hog raising:

"About ten years ago I adopted the following mode, and have been very successful: I raise but one litter or class of pigs during the year, which is attended to with much less trouble, and relieves me of the expense of keeping old sows over through the winter, though this mode has been frequently assailed by hog raisers, alleging, that breeding from gilts every year, hogs would soon degenerate, but the result of ten years' experience has demonstrated the opposite, as my hogs have for the last ten years made heavier weights than at any time previous. About the latter end of August I select my gilts from the spring pigs to breed; they should now be kept in moderate condition until the first of December, at which time they are to be bred as near the same time as possible. After they are bred, they should be liberally and regularly fed, not allowing them to decrease in flesh—giving very little salt during this time. A few days before they have their pigs, give each one a separate apartment, provided with plenty of clean litter and a shelter. After they have their pigs, they are by no means to be disturbed for twenty-four hours, during which time they will require no feed. They are then to be fed very lightly for a few days on mixed slops and grain, (warm slops, preferable,) gradually increasing her feed until you give her all she will eat. If the pigs are white, they frequently mange at about ten days old; an application of soft soap will relieve them; raw vegetables should not be given while the pigs are young. Young pigs should by no means be allowed to sleep in dust or on wet straw, or be allowed to run through high grass or weeds, especially while the dew is on. Before the pigs are weaned they will learn to eat; a pen should be built with an opening large enough to admit the pigs only; feed the sows around the pen; the pigs will soon learn to go in and eat without being molested by the sows. After the pigs are entirely weaned by the sows, castration should be performed. They should be penned in the evening, and the operation performed soon the following morning while it is cool; by no means allow them to be chased or run previously. Three hands are necessary to perform the operation, one taking position in-

side the pen, handing the pig to another on the outside, he placing his left foot on the neck behind the ear with a hind foot in each hand, and the left side of the pig up; the operation is easily performed.

Spaying should now be deferred until the pig is from three to four months old, and should by no means be allowed to become fat previous to the operation. This latter practice has been generally abandoned by the farmers of this country, as it has been clearly seen that the loss, which generally followed the operation, more than balanced the benefit derived from it. The practice first originated from two reasons; the first was, that young sows would not fatten well without it; the other was, to prevent the necessity of keeping those we bred from the rest. The first difficulty has been overcome by the introduction of breeds that fatten at any age, and under almost any reasonable treatment. The other difficulty is obviated by a different mode of management, which produces better and more satisfactory results, without that loss which generally occurs from the practice. If hogs are kept in the pen through the summer months, a greater variety of food will be necessary than when permitted to feed on clover, grass, or roam over the farm. As it regards the kind of feed for hogs, I am particularly in favor of cooking all, when it can be done in a proper manner. When I cook the feed, I use a common scalding trough, with sheet iron bottom, placed on a furnace. I then make corn or corn meal the body; then add as many different kinds of vegetables as you please, and boil till done, and feed either warm or cold—warm is best in winter. Sweet feed is better than sour—cooked is better than raw—but where hogs are raised on a large scale, I doubt the profit of cooking in any way, except for sows and pigs. Corn undoubtedly is the standard feed for hogs, and without it, I doubt the profitable success of hog raising. And now, from experience, I have formed this conclusion: that the most economical manner a hog was ever fed, is to keep it comfortable, and to feed a variety liberally from the time he is born until you kill or sell him. There is no economy in half feeding and half starving, or starving awhile and feeding awhile.

..
 Motto for a journalist—"do write, and fear not."

Hide-Bound.

Strictly speaking, the condition signified by the above term is not so much a disease as the consequence of exposure, of poor provender, and of neglect. Thrust a horse, which has been accustomed to wholesome food and a warm stable—thrust such an animal into a straw yard, and leave it there, through the long and severe winter of this climate. Let every creature which has been used to have its wants attended to and its desires watched—let it, for months, exist upon a stinted quantity of such hay as the farmer cannot sell—let it go without liquid, and at night be driven by the horns of the bullocks to lie among the snow or to shiver in the rain—let an animal so nurtured, be forced to brave such vicissitudes, and, in the spring the belly will be down, and the harsh, unyielding skin will everywhere adhere close to the substance which it covers.

Straw yards are abominations, into which no feeling man should thrust the horse he prizes; and no feeling man should long possess a horse without esteeming it. The docility is so complete, the obedience so entire, and the intelligence so acute, that it is hard to suppose a mortal possessing a creature thus endowed, without something more than sheer regard for property growing up between the master and the servant.

Every amiable sentiment is appealed to by the absolute trustfulness of the quadruped. It appears to give itself, without reservation, to the man who becomes its proprietor.—Though gregarious in its nature, yet, at the owner's will, it lives alone. It eats according to human pleasure, and it even grows to love the imprisonment under which it is doomed to exist. Cruelty cannot interfere with its content. Brutality may maim its body and wear out its life; but as death approaches, it faces the knacker with the same trustfulness which induced it when in its prime, to yield up every attribute of existence to gain the torture and abuse of an ungrateful world.

Liberal food, clean lodging, soft bed, healthy exercise, and good grooming, compose the only medicine imperative for the cure of hide-bound. The relief, however, may be hastened by the daily administration of two of those tonic and alterative drinks, which act so directly upon the skin. Drink for hide-bound—Liquor arsenicalis, half ounce; tincture of muriate of iron, one ounce; water, one pint. Mix, and give as a dose.—*Turf, Field and Farm.*

Profits of Farming.

No small experience and some observation convinces me that circumstances being equal, farming will furnish as ample a compensation for labor, as ample a dividend upon capital invested, as the common trades which men in engage in, and even the ordinary pursuits of mercantile and commercial life. Of course I except all extraordinary cases of good fortune, and all matter of gambling and speculation.

The returns of most crops strike one sometimes with astonishment, and would if taken as a test, lead to the most delusive speculations. A grain of seed sometimes returns one hundred fold! and this being sown a second year, would perhaps give ten thousand fold, and so on in geometrical ratio. Seventy bushels of potatoes planted will yield four hundred, or twenty for one; a bushel of wheat sown will yield thirty bushels, or thirty for one; a peck of corn planted will yield sixty bushels, or two hundred and forty for one; a pound of carrot, beet or ruta бага seed will produce six to nine hundred bushels, worth one hundred dollars.

The proceeds in these cases seem to be enormous, yet they are constantly realized, and that too in many cases at comparatively small expense. But no confident conclusions of the exact profits of farming are to be drawn from such results as these; so many untold circumstances of abatement enter into the cost, that if these were the only elements given in the case, the solution of the problem would give the most erroneous and deceptive results.

We are not to look to agriculture for any extraordinary or sudden gains, as, for example the drawing of a prize in a lottery, or a shrewd speculation in stock.

If we will take ten merchants with a fixed amount of capital, and ten farmers with the same amount, we will find that at the end of twenty years the farmers have the greatest increase of capital, and that the increase is more evenly divided among them than among the merchants. Farming is also far safer and more certain to secure a competency than mercantile pursuits. I venture to say that twenty merchants fail in business to one farmer, and this ought to open the eyes of young men with small capital going into business.—*German-town Telegraph.*

—A man in Rockford, Ill., made over \$2000 in 1867, from the sale of crops raised on four acres of land.

About Mowing Machines.

Buy the best. It is the cheapest in the end.

Buy early, to be sure you have the one you wish, and not find out just as you are ready to commence haying, that you cannot get the kind you desire.

When attaching the horses, see that the knives are in a horizontal position, neither pointed up or down; this secures a smooth, even stubble, without cutting off a portion of it twice.

See that all the nuts are turned tight. The builders are obliged to complete a portion of their machines months before the time for using them, and nearly all wood will shrink a little.

Buy the best oil you can find. Sperm, if possible. If you cannot get that, kerosene and castor oil mixed, say about one-third kerosene and two-thirds castor oil does very well.

Keep the bearings well oiled; also the buttons which hold the knives down to the plates in the fingers.

Keep the knives sharp all the time. Take both scythes into the field sharp, and once in an hour or so rub the edges with a sharp gritted whetstone; this saves sweating your horses, wearing out your machine, and leaves the field as though you understood your business. Use the scythes about equally; they fit and work better.

Keep the buttons down as close to the cutter as possible, and have the scythe play easily. Examine them frequently, and as they wear rap them down with a hammer, so as to keep the edge of the cutters in close contact with the edge of the steel plates in the fingers. You might as well expect to cut wet paper with a dull, loose-jointed pair of scissors as grass with dull scythes, not in their proper position.

Whenever the cutters become worn to a point, and begin to grow shorter, have new ones put on; it is the poorest kind of economy to use them so—about equal to using a worn-out plough-point.

Examine your machine carefully as soon as haying is over, and if it needs any repairs, send it at once to the manufacturer, unless you can replace the parts wanted yourself. He has time in the fall, and before he begins to turn out machines for next season, to attend to it faithfully. You thereby save yourself much vexation and loss by reason of his not being able to serve everybody first.

If your machine needs repairing, take out the scythes, wipe them clean, and then rub them over with an oily rag to prevent rusting. Oil the fingers, also remove the pole and bar, put the bar and scythe in a dry place, clean your machine thoroughly, and keep it dry and clean.—*Mass. Ploughman.*

Raising Buckwheat.

This crop is regarded by many as a profitable one on land designed for winter wheat, in a two-fold way—as a fertilizer in retaining moisture, in attracting and conveying to the soil the manurial agencies floating in the atmosphere, and, at the same time, furnishing, as a result, a welcome portion of bread material for family consumption without detriment to the crop of winter wheat which is to succeed. Instead of letting the ground rest, as it is termed, in a fallowed state, it is made to furnish an extra crop counted as so much clear gain. It would be absurd to assume that a crop of anything, drawing nourishment from the soil, does not weaken, at all, its productive force, unless it can be shown that with the draft made there is coupled a compensating power which serves to balance the account. This restoring force is ascribed to buckwheat by many who have grown the article and watched the effect on the subsequent crop. On a certain occasion a field of ten acres—an old pasture—was summer-fallowed quite early. It was a heavy clay soil, and after it had been turned over a couple of weeks, two acres of it were sown to buckwheat. It was well harrowed, in the direction of the furrows, and a very tolerable seed bed secured. The result was a good yield of buckwheat, while that of the winter variety, which followed, was one-quarter better on the buckwheat ground than that on the portion which was allowed to rest and recuperate in fallow. The stolen crop seemed to give a liveliness and elasticity to the soil of the section used, which the fallow rest failed to impart to the remainder.—*Rural New Yorker.*

137 The planting of "the trees of righteousness" is from God's Word; their growth is from God's spirit; their root is faith; their sap is love; they are full of the fruits of holiness; they mount far above the earth in their beautiful uprightness; they grow, and point toward God. And shall they after all die? Verily I say to you, not one of them shall die.

The American Farmer.

Baltimore, July 1, 1868.

TERMS OF THE AMERICAN FARMER.

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Near Baltimore Street,

BALTIMORE.

Crops and Prices.

In our September number of last year, page 82, we have the following under the heading, "*The Grain Crop of the Country*": "It is not easy to make an impression upon public opinion when the expression is so general as that we have lately heard, in regard to crops of wheat and other grain. We do not fear, however, to put upon record the opinion that the general estimate of the crops of the late harvest is a very exaggerated one. That, taking the country through, the crop is a fair one, and, of course, greatly beyond that of '66, may be admitted, and for this we should be very grateful; but that it is so far in advance of any crop heretofore made, is, we believe, not true. There has been a great deal of failure, and partial failure, in wide-spread sections, which receive no notice, in the great desire to believe, or to have it appear, that the crop of the season is an extraordinary one."

"If consumers really got the benefit of the lower prices which are consequent upon this magnifying of the crops, there would be less reason to deprecate it. But the effect is to lower prices until the crops have generally passed from the hands of farmers, and, later in the season, to put them as much above a proper standard as they had been below. The consumer gains nothing, the farmer loses, and the speculator alone profits by such a falsification."

The most appropriate comment we can now

make upon this is, that the quotations in *The American Farmer* of that date, September 1st, show the average price of wheat to be two dollars and thirty-five cents, while the quotations of date May 1st, show the average price to be three dollars and sixteen cents—a difference of eighty-one cents per bushel.

Now, we have just the same game over. The newspapers are full of the most glowing accounts of the crops of grain. Here are a sample of extracts as gathered up, strange to say, by an agricultural journal of date of May 23d. "*The Industrial American* says: There will doubtless be a larger crop of wheat than for many years past, or, perhaps, ever before, as the amount of acreage devoted to this staple, is stated to be greater than usual, and its appearance at this time exceedingly flattering."

"Correspondents writing from Livingston county, Missouri, estimate that ten acres of wheat were sown last fall in that county to one in former years."

"From almost innumerable counties and towns in each of the Western and Southwestern States, encouraging reports are to hand concerning the quantity sown and the appearance of the crops."

"Throughout Mississippi the cereals are all developing rapidly and finely."

"The *Lawrence (Pa.) Journal* reports that there was never a more favorable prospect of a good crop of grain now, in that State."

"Nearly all of our Ohio exchanges bring good tidings, especially of the wheat prospect."

"We learn from the Hillsborough (Highland Co.) *News* that 'there has not been so good a prospect for wheat for several years.'"

"The wheat crop in Green county is looking splendidly."

These are mere samples, taken as we have said, at random, from a single journal, and must all have been written by the middle of May or before.

Now at that time, the condition of the wheat crop of the country was precisely what it was a year ago, at the same period. It had stood the winter well, there were enough plants on the ground, and a wet spring had forced the growth of straw into a luxuriance that was very fair to look upon, but by no means favorable to a safe delivery of the precious seed that we expect. Indeed there is hardly any condition of the crop more dangerous than this forced growth that makes people brag so

of "a great show for a wheat crop." Yet this is the only circumstance which gives color to these extravagant reports. Last year, the crop passed, without any serious disaster, up to the very time of harvest, but failed to bring to maturity a full, plump berry. This year there is superabundance of straw, which, if it escape rust, smut and storms, is still not of that character that bears full crops of grain. The heaviest crops of wheat ever made, perhaps, grew some years ago, in two successive springs, on short, stiff straw, that was scarcely wet with rain, throughout the spring growth, till harvest.

There seems to be no remedy for the evil we are speaking of, so far as the general newspapers are concerned, which must have news items, and must take them from whatever source, reliable or unreliable. Until our State Associations or State Boards take up the matter, and each within its sphere, takes due pains to get early and reliable accounts of the crops, the farmers will be victimized every year, as they were last year, and have always been.

The State Agricultural and Mech'l Asso'n.

We give in full the proceedings of a meeting of the Trustees of the Maryland Agricultural and Mechanical Association, from which it will appear that this Society has had appropriated to its use, from several sources, the aggregate sum of *seventy thousand dollars*, with a promise of more, if needed, from liberal merchants and other citizens of Baltimore.

The State and city had, severally, voted \$25,000, and at a previous meeting a Committee, at the head of which was that earnest and public-spirited Maryland farmer, Allen Bowie Davis, Esq., was appointed to call on citizens to ascertain what additional amount might be obtained. In the few days given to the matter the handsome sum of \$30,000 was subscribed.

This result, with further careful consideration of the advantages of the several sites, led the Committee to the selection of the property known as "Pimlico," a very handsome location, with the objection made to it of being, for the present, not so accessible as is to be desired. The State Trustees concurred with the Committee in preferring this site.

It is to be regretted that the Trustees of the city fund objected to the selection; and, considering themselves entitled to vote in the selection of grounds, have felt authorized to

announce their intention of withholding the city's appropriation. Their action was based on the idea, no doubt, that as holders of like sums of money, the State and City Trustees stood on just the same footing—a misapprehension which a little consideration of the facts will dispel. Nothing can be clearer than the right of the Association, *prima facie*, to choose its own grounds, and the State Trustees were only authorized in the charter to make the selection, because they were, also, in fact, the Executive Board of the Agricultural and Mechanical Association, with its President and Vice-Presidents. It will be found in the act of incorporation, that the first section names certain persons, twenty-eight in all, who, "with their associates," are to constitute the Society. But as membership tickets might be cheaply bought, and designing persons might be able to control the fund, the section which makes the appropriation names the same persons, the President, Vice-Presidents and Executive Committee, not including "their associates," to be Trustees to apply the fund. There was no intention of taking the right to select their grounds out of the hands of the Association, but only to protect that right the better by confining the use of the money to certain well known citizens, already chosen as the chief officers of the Society.

A little cool and quiet consideration would soon have made it apparent, therefore, that the State's Trustees had no right to admit the City's Trustees to determine the selection of a site; but having made the mistake once of considering the matter in joint meeting, their declining to do so again involved an apparent discourtesy which interfered for the time with the harmony of the bodies. It is hardly possible that the City Councils meant to require more of the Society than to confine itself to the near neighborhood of the city, and there can be no reasonable doubt, the present difficulties will be amicably arranged.

— We are indebted to our esteemed correspondent, Mr. Hansen, for a few seeds of "Seradella," spoken of in June number of last year. He says:

"I am at present very busy planting four acres with hops and three acres with wine. I am determined to give up plain farming and turn my attention to the above named crops."

Power of Recovery in Land.

Nothing should be more encouraging to the holder of impoverished lands than the remarkable restoration so frequently accomplished by what would seem very inadequate means—a few bushels of lime or guano, or plaster, making all the difference, in a short time, between what seems to be sterility and a high degree of fertility. Take, for instance, the effect produced by lime, which, though applied in much larger quantity than many other fertilizers, is extremely small in comparison of the great mass of earth it is applied to. We find it, under judicious management, changing the whole character of the surface soil and its productions, both as to quality and quantity of the latter. Two or three bushels of gypsum (sulphate of lime) produces on some soils the same and even greater effect. A dusting of Peruvian guano makes the increase of the first crop four, five and even ten-fold.

Now, it is well known that it is not the additional matter that adds so much to the crop. It is the action, mainly, which it brings about upon the already present constituents of the soil. Lime, for instance, is often added, when there is quite enough already in the soil for all the purposes of crop food; yet there is an action brought about in the soil making it capable of production unknown to it before. All the elements of food were present in sufficient quantity, but they needed some "moving of the waters" to imbue them with life-giving power—some change in their combinations and relations, which the added element causes. Sometimes, indeed, this change is not immediate or direct. Sulphate of lime will have no effect, it may be, on a crop of wheat to which it may be applied, but makes the crop of clover which follows; and that given back to the soil, it has all the elements of fertility in full play. Yet nothing but the bushel or two of sulphate of lime has been added. It is still the old field, with its undeveloped capabilities brought into action by an extremely cheap and simple expedient.

But we are too apt to say, when we see a neighbor take the start of us in such improvement, that his land is naturally better than ours. It cannot be doubted that there are material differences in the natural constitution of soils. But it must at least be proved, by a proper trial, that yours may not be improved by the same means as your neighbor's,

or by some other means as effective, which are not yet tried, or not yet, possibly, discovered. We know of no land that should be abandoned to hopeless sterility.

Fruit Culture.

The people of Maryland, Virginia and other Southern States have a great deal of land for sale, and great necessity for making more profitable what they do not sell. There is great occasion to increase the product of ordinary crops, and still greater for introducing others which shall prove more profitable.—Nothing is so promising in this direction, nothing so easy to accomplish, as fruit growing. There is no mystery about the business. Every one who owns a piece of land at all, owns trees and shrubs, and has some knowledge of their mode of treatment. He need only give the subject a little more attention, and the interest which an important matter deserves. Fruit cultivation has greatly increased within some years in more northern States, but the demand for its products goes ahead of the supply. The number of acres in grapes in the United States in 1840 was estimated by Mr. Downing at 3,000; an intelligent estimate makes it now 100,000. But the price of grapes has increased, and the price of native wine three or four fold.

Passing over other fruits, many of which might as well reward intelligent care, and give the landholder a large income from a well tilled surface comparatively small, we wish especially to urge attention to the cultivation of the grape. There is a drawback here, we may mention, in passing, in the formidable disease which sometimes blasts the crop. But we have rinderpest and hog-cholera, and rot in sheep, and fly, and rust and smut in wheat. As these are ills which all flesh is heir to, so all crops and all animals are more or less subject to like influences. We do not hear that grape-growing is anywhere abandoned because of the disease, but intelligent men are every where combatting it with more or less success. Some seasons there is little of it. It may, like similar evils in many cases, pass away and become only occasional; or hardy varieties may be found, which will have constitutional vigor enough to resist its attacks. Already a well-known and valuable variety is comparatively exempt from its attacks. This variety—the Concord—though less esteemed than several others

for the table or for wine, is so productive and so vigorous that, bringing, as it does, a good though not the highest price, it is likely, for the present, to take the lead for market purposes.

One great advantage of grapes over other valuable fruits is that they may be sold at once in the markets, and the time of sale extended through several months, as they may be easily preserved; or they may be manufactured into wine at even a greater profit. The demand for fruit, and especially good fruit, grows rapidly, and the health of the people in cities, as well as their taste, calls for a greatly increased supply.

But the demand for wholesome wine and good brandy is even more urgent. With all the temperance preaching in the world men will have wine. Our private opinion is that a thriving, well to do people, ought to have it, not for abuse but for use. If men abuse a good gift, it is the fault of the men and not of the thing abused. But it is very much to be desired that they be not cheated into the belief that some "villanous compound" is the good thing they seek. There is more champagne wine sold in the city of New York than is made in the whole champagne grape region.

Apart from the matter of wine, let us look at the value of the grape crop as we find it, in what we should think the most unpromising grape region, the State of Massachusetts. A correspondent of the Horticulturist says: "Two of the largest grape growers in this State tell me that they make \$1,200 per acre per annum with the Concord." The originator of the Concord grape, in the same State, says: "One acre of well established, healthy vines will give about seven tons of grapes, worth at wholesale, on the average of the last four years, fourteen cents per pound, or about \$2,000. This amount, large as it is, has been exceeded in many cases, but if you reduce the result one-half, you still have one of the most profitable crops known to our husbandry." Now, we may add, reduce this half one half more, and is there any crop of wheat or corn or tobacco which will begin to compare with it in profit? Or is there anything to deter us from the growth of the more profitable crop? There is no mystery about its cultivation. It is much simpler work than the management of a tobacco crop. It is far less laborious.

The work is at no time heavy or pressing, except at harvest, when extra hands can be easily had for the pleasant and cheerful labors of the vintage.

There is no impediment or hindrance, but the want of enterprise, or the want of disposition to look a new undertaking in the face and turn it to advantage. Yet there are native Maryland farmers who have devoted hundreds of acres to the growth of strawberries, and others who have planted hundreds of acres in peach trees, and some who have planted pears largely, and some grapes.—Almost all who have persevered and given due attention to their business have prospered. Had the number of them been three or four-fold there would have been by this time such a demonstration of fruit-growing capacity in the soil and climate of the State as would have saved her landholders from the beggarly prices at which many of them must sell their lands.

But the necessity which is upon our farmers now of getting large products from small surfaces, and with the least cost of labor, will give a stimulus in the direction of fruit growing which will not be unheeded, and we look to see an interest in the subject which has been heretofore unknown.

Dr. Stewart's article on Phosphates and Superphosphates, will receive of course the attention he always commands from those interested in such matters.

We received last month, a short article, from a disinterested source, asking us to inform our readers that a certain superphosphate which indicated much superiority in the experiments detailed by Dr. Stewart in our February number, was a certain brand, well known in the market. We felt obliged to decline the request for several reasons, but especially because Dr. Stewart himself had not seen fit to indicate it to us.

County Societies and Exhibitions.—In Montgomery, Frederick, Washington and Carroll counties, there are prospects we learn, of fall exhibitions by the several societies of those counties. This is a gratifying exhibition of a renewed interest in agricultural matters.—We hope that within the coming month the State Society will have made up its premium lists, and concluded definitely every thing necessary to make its exhibition a certainty.

Basket Willow.

The cultivation of the willow when it has been successfully pursued, is known to be very profitable, and must become more so as the country grows older. Oak has been the chief reliance for baskets in our region, and there has been a most wasteful destruction of white oak timber; the young trees being selected when in their prime growth, and so small as to furnish very little material. But this and other woods that might be used for the purpose are rapidly diminishing in the Atlantic States, while the demand for baskets is rapidly increasing, not only for all ordinary purposes, but for transportation of fruits, vegetables and other articles of trade that must go in small parcels. In England, formerly, all light goods were packed for transportation in light boxes, and in mats, and so were vegetables. Now, we are told, baskets are in universal use, except for goods that will be injured by getting wet. "Willow packing-baskets are in use for almost every purpose of transportation, by farmers, gardeners, wholesale dealers of all kinds, and by all classes in the community for every possible purpose."

There is no difficulty or mystery in the cultivation of the willow, and ordinary intelligence and care, with good ground to work upon, will insure success.

The first direction to be given is to select ground which must be rich and moist, but not wet. It is very commonly thought that the willow will not thrive but in wet ground, but this is a mistake. It will be found that it thrives best not where the land is wet, but along the banks of streams where it is always well drained, but always moist, and never suffering from drought. Consequently, we find the best land for willow plantation is a rich alluvial interval that is flowed occasionally; or a mucky swamp, naturally moist, but well drained. Even if the land be rich it will be wise to mix with it a heavy dressing of manure, because this can best be done before the plantation is made; and the annual crop will make a very large demand upon the soil. The manure may be fresh, and be deeply turned under, and the ground then harrowed and put in a state of thorough preparation. This work is for many years, therefore, no pains should be spared to do it well.

The land being prepared, mark it off as for corn, or use a line to set by, setting the cut-

tings in rows three feet apart, and about a foot apart in the rows. Stick them perpendicularly, and leave but one or two buds above the ground. If it be a fresh turf that has been turned, use an iron spindle to make a hole for them. On mellow land it is no more work to set an acre of willows than to plant an acre of potatoes, but it is very important that it be well done, because the planting is for many years; if badly executed now, the ill effects will be perpetual, and the crop never satisfactory.

In the beginning of the willow culture in this country great disappointment was experienced from the fact that many of the varieties best known and prized in Europe, failed in our climate. But this obstacle has been overcome, and experiment has determined other valuable sorts which Mr. Chas. Downing thus describes;

"1st. Forbes' willow (*Salix Forbiana*), hardy and productive, its rods having almost a leathery toughness, but it does not whiten well, and in consequence its usefulness is greatly abridged; for work where unpeeled rods are used it is most excellent.

"2d. Long-Leaved Triandrous Willow—*S. triandra*.—This whitens beautifully, is very tough and pliable, and grows vigorously, with less drainage, than any other of good quality. If the soil is very deep, it will grow with almost equal vigor, where the ground is very dry; and in addition it has the excellent habit of early ripening the extremities of its shoots, on which account it is quite hardy in high northern latitudes. With our German basket makers, it is a general favorite, particularly for split work.

"3d. Purple willow—*S. purpurea*.—This is the representative of a large class, and appears to be far more valuable for osiers in America than in England, where it is represented as giving shoots from three to five feet in length. I have standing by me a bundle of its shoots, from cuttings planted last spring, that averaged more than six feet; and another bundle, from the established plants, of nearly ten feet. They were grown with good but not extraordinary culture, and any good field may easily do as well. It is much more fastidious in its habitat than either of the preceding—delights in richness, depth and moisture, but does not tolerate excess of wetness.—When well established it has but one superior in productiveness, and may easily be made to

yield four tons per acre of the most excellent tops, particularly for fine, whole work, for which it has no superior. For live fences it is very valuable, and in England is extensively used for fences for the exclusion of hares and rabbits, as well as cattle, the bark and leaves being so intensely bitter that they will touch neither, while the shoots being long, tough and flexible, may be formed into any shape, and a fence of this kind is reckoned little, if at all, inferior to one made of wire."

We commenced with the design of directing attention to the willow for basket-making. Its many other uses, especially for fence making, are worthy of notice.

Charges on Tobacco—The State Tobacco Warehouses.—Mr. William L. McPherson, Superintendent of Labor and Agriculture, calls the attention of those concerned, to an act of the late Legislature in relation to charges on tobacco, which is to the effect "that every hog-head of tobacco which has been sold, or may hereafter be sold, at the tobacco warehouses by the grower or person in whose name the same may be inspected, shall, from and after the expiration of three months after said sale, be chargeable with storage at the rate of twenty cents per month for the time it shall remain in the warehouse, to be paid by the buyer before the same shall be removed."—Mr. McPherson further orders that "the vendors of tobacco stored in the State tobacco warehouses will be required to endorse the date of sale upon the inspector's notes."

Record of Horticulture, No. 2. By A. S. Fuller. The second number of this valuable work is now ready for delivery. Every man interested in fruits, flowers or vegetables, should have a copy for the descriptions of new plants, shrubs, trees and vegetables which it contains, with lists of the most valuable.

This work gives the experience of one who knows what he is writing about, and has no axe to grind himself, except to keep his readers posted in regard to the progress of horticulture. Handsomely bound in cloth sent post-paid, \$1. F. W. Woodward, publisher of horticultural and agricultural books, 37 Park Row, New York.

Like some precious gums, grace distills most and in greatest plenty after storms and violent thunders.

Buckwheat.

Buckwheat is not a very favorite crop in Maryland, but it has some qualities which should make it more popular, at least to the extent of cultivating a few acres yearly.

One advantage is, that it may, and should be sown late in the season, much after the time that any other crop of grain would have time to mature; and so may make up a deficiency when others fail.

Again, it will grow with more profit than almost any other crop upon poor, sandy lands.

It is a good crop to sow upon rough lands just taken out of the woods. It is a cleansing crop, destroying grubs, wire worm, &c.

It is not uncommon to grow it as an improving crop, for the purpose of ploughing under, and increasing the quantity of *humus* in the soil. Any advantage it may offer in this respect is owing to the circumstance of its making a larger mass of vegetable matter than other crops, on the poorer class of lands, and so causing a quicker accumulation under unfavorable circumstances, of the vegetable material so essential to the ground-work of fertility. On soils of a better description, however, it is inferior to many other plants for the same purpose.

While buckwheat will grow well on comparatively poor lands, it is peculiarly alive to generous treatment, and will give a good return, in a very short time, for any expenditure in the way of fertilizers.

The flour of buckwheat is considered indispensable by many families for breakfast cakes in winter, and deservedly so. With a sufficient accompaniment of good butter, they are unequalled. The grain makes good food for all domestic animals. Poultry and pigs thrive well upon it. Ground coarsely, it is a favorite grain for horses where it is well known, and for cows causes a flow of milk more abundant and nutritious.

The preparation of the ground for buckwheat should be made as early as it can be conveniently done, lest it become so hard that it cannot be broken; but pasture ground ploughed at any time before the sowing season will answer the purpose. The middle of July is early enough to sow the seed, or even somewhat later. If sown too early, the bloom is liable to be blasted by the fierce heats of the summer's sun. A half bushel to three pecks of seed is sufficient.

Extracts from Correspondence.

....., N. C., May 11, 1868.

My Dear Old Farmer:

Lest you may think that I have passed from the stage of mortal woes, and write my obituary, of which I fear my surviving friends might not be proud, I send you two dollars enclosed. I do not know how much I owe you, but I know this is not all. I have treated you very badly, by imposing upon your long suffering and forbearance. I do not intend to be a sponger, and when the devil gets his dues, or sets these infamous, indolent negroes to work, so that they will not steal the rewards of honest labor, then if I don't pay you every red, there's no honesty in man, or no money in the territorial South. I fear you don't know one-millionth part of the newly made "citizen's" character. Pity but every Northern Radical knew it all. Can't you do something to help us out of trouble? Send us forty cargoes of Hindoos, Hottentots, Malays, Chinamen, Indians, anything; we can not be worsted. Talk about raising subscriptions for railroad charters, life insurance, political bribery, &c., but if you want to see a pile of worn-out shiplasters, raised from the ashes of general ruin and demolition, then pass around the hat to get money for reliable, honest, intelligent laborers to come to North Carolina, and you'll get a pile mountain high. Yours till then.

....., Va., June 18, 1868.

Editors of American Farmer:

GENTLEMEN: I have read your June number, being the conclusion of your second volume, and with sincere gratitude and best wishes for the success of your valuable periodical, I respectfully ask a discontinuance. (I am in no ways a producer, and your excellent paper is of no use to me, although I think it ought to be taken by every person who cultivates an acre of the soil.)

With great respect, I am, gentlemen, your obedient servant, &c.

The above comes from a gentleman of the old times, who stood among the first of her sons, when old Virginia was a State. He was a subscriber of long standing on our lists, and an occasional contributor, and when a year ago, he asked to have his subscription discontinued, for a reason so common among our Southern friends, in the few years past,

we took much pleasure in asking him to receive it without charge.

Some young man must now take his place. Every now and then, we hear from one of these, who has moved off from the old homestead, but recollects that his father took *The American Farmer*. In Georgia, Tennessee, Texas, and in all the Southern and South-western States, there are thousands of these, who, when times are settled and they settle with them, will be self-appointed agents of the Farmer, "for auld lang syne."

....., S. C., April 15, 1868.

MESSRS. EDITORS: I have to beg your forgiveness for my long neglect to pay my subscription to the *American Farmer* for the year ending July, 1868. The war and its results has reduced me from property independence to almost a state of penury and want. With a large family of daughters only, left on my hands to support, and for a man of my age, (nearly 71,) with inadequate means, I have a "hard road to travel;" but yet I am not willing to give up my old favorite. I now enclose you two dollars for the last year's volume, &c.

Hoping for a continued and increased patronage to the old *Farmer*,

I am, very respectfully, yours, &c.

Messrs. Worthington & Lewis:

Circumstances require me to request you to discontinue the "American Farmer," sent to for the year ending the first of May, 1868. Enclosed please find 25 cents for the May number. Very respectfully.

Nelson Co., Va.

We see sharp grumbling in our exchanges sometimes, of shabby ways some people have of getting rid of their subscriptions—allowing a paper to run, one, two, or three months, and ordering it stopped without paying for the extras. This is not the "style" of our subscribers. When they get one extra number, they think it should be paid for, at more than the yearly rate.

HUNTINGTOWN, Md., May 25, 1868.

MESSRS. EDITORS: I contemplate planting this fall a large stock of apple trees, with a view to market purposes, but not having sufficient knowledge in regard to the varieties and different kinds of fruit to enable me to make a judicious selection, you will therefore

publish in the "Farmer" a list of the very best fruit for the market. I wish you particularly to note the winter varieties, as it appears to me they are more profitable than summer and fall apples. I wish to plant the very best fruit, so that I may know just what I am doing. Your favor will greatly oblige a subscriber.

I am yours truly, &c.

W. H.

We shall be very glad to have the opinions of Maryland fruit growers on this subject.

MEHANEVILLE, N. C., June 18, 1868.

GENTLEMEN: I have a clover field which has yielded a fair crop of hay this (its second) year. I shall need it for hay next year. How will it do the third year? and if kept for the third year, should the second crop be mown or pastured?

I have a lot, a thin oak grove, which I wish to use as a permanent horse pasture—for odd times—that time may not be lost in getting work horses from a large and more distant pasture, and that the horses, in short intervals of leisure, may not lose the benefit of pasturage—which, by the way, I think a good idea for any farmer. The lot in question has now upon it a fair stand of clover, which will soon be unfit for horses. What grass would you advise, and when and how should it be put in?

By answering these questions as soon as convenient, you will greatly oblige,

Yours truly, R. BINGHAM.

ANSWER.—Clover being biennial, is not usually reliable for a crop after the second year. It varies in this respect, however, and often a good crop may be had the third year or longer, and may be treated just as the second year's growth.

For the lot spoken of, the sod may be turned well once, and a light sowing of rye, with orchard grass and clover seed again. For permanent pasturage, the orchard grass should be the chief reliance. Once well set, it will last as long as it may be wanted.

Tobacco Curing—Weatherby's Apparatus.—Those interested will, no doubt, read the advertisement of Weatherby's Tobacco-curing Apparatus, which claims some advantages over that of Bibb & Co. In some sections, the use of coal instead of wood, will be found a great convenience and economy.

For the "American Farmer."

To Improve Poor Land Without Rest or Clover.

The difficulty with some farmers in ploughing in green crops for manure is, their soil is too light or too poor for clover. Let them try this: sow your land in rye, wheat or oats in June; when the crop is cut off, sow corn and field peas broadcast; just before frost plough them in. If your land is not very poor indeed, you will have a good crop of these vines to turn under. You can then sow again in oats, wheat or rye, and follow by peas, as before. Thus you can turn in a good crop without losing a crop to grow your stuff to turn in, and the cost, including the seed peas, (seed \$1.50 per bushel,) will not exceed \$3 per acre. Peas, every one knows, will do well on soil too light and too poor for clover.


Near Fayetteville, N. C.

The Sampson Scale.

Recently, at a public trial of one of these scales, we had the pleasure of witnessing the interesting and severe tests resorted to, and of examining minutely its mechanism. Certainly it is an important and scientific combination of mechanical principles, whereby a greater degree of accuracy, equality, durability, compactness and simplicity is attained than in any of the scales commonly in use. We lately saw a mathematical calculation that demonstrated the scientific principles on which the scale works, and proved beyond a doubt the practicability of the invention. Its accuracy depends chiefly on its being built on the short lever principle, with comparatively no oscillations on the pivots or knife edges. The main levers being vertical and very short, they cannot spring, and, having no checks rods, they cannot interfere with the free action of the platform, which rests at its four corners on four carriages, which, swinging freely by links, keep the platform perfectly horizontal, and preserve it from rubbing or jamming against the frames. By this judicious arrangement, the weight may be placed upon any part of the platform and still retain the same degree of accuracy. The wear and tear caused by the oscillations of the platform comes upon this system of yokes and links, and does not affect the knife or pivot edges, which are subject only to the almost imperceptible wear caused by the slight friction incidental to the poising of the weigh-beam, which in other

scales is entirely upon the knife edges. Its compactness is remarkable, and can only be accounted for by the simplicity of its construction. This is practically illustrated in its ready adaptation to weigh-locks for canals. The scales being suspended within, and bearing upon the side or chamber walls of the lock, do not require the ordinary house or superstructure for their insertion, thereby saving a large expense. By the aid of a screw attached to a lever, they can be adjusted or scaled in a few moments, thus doing away with the long and tedious process of filing and polishing. These scales have been in use a number of years in New York State—at the Morgan Iron Works, foot of Ninth street, East River; in the weigh-lock at Waterford, N. Y.; in the Penna. Coal Co's Yard, East Twenty-third street, and in many other localities. They have always given entire satisfaction, both in regard to correctness and durability, and from their simplicity no repairs have been required to keep them in proper order.—*American Journal*, N. Y.

This scale, in constant use, can be seen at Washburn's Coal Yard, Light and Lee streets, in this city. Messrs. F. B. Loney & Co., No. 240 Baltimore street, are the agents. See advertisement.

 *Sorgo*.—Those of our readers who are interested in the manufacture of sorgo, are referred to the advertisement of Messrs. Blymer, Norton & Co., Cincinnati, who, we learn, have the largest manufactory of sorgo machinery in the country.

PUMPKINS AMONGST CORN—Almost all "old-fashioned farmers" take off a crop of pumpkins from their corn-fields, much to the annoyance of the theorist, who demonstrates to his entire satisfaction that the one crop must detract from the full force of the other. But the most careful experiments show no loss to the corn. The same weight results from an acre, with or without the pumpkins. It does at first thought seem as if it ought not to be so. If it takes just so many bushels of corn to fatten a hog, it is not clear how we are to fatten two from the same quantity. This is the argument of the theorizer. But the facts are as we have stated; and the reason probably is, that the pumpkin and corn feed on entirely different foods in the soil, so that the one can go on without the other.—*Western Rural*.

Maryland Agricultural and Mechanical Association—Site Selected for Fair Grounds.

In accordance with a call emanating from Governor Bowie, President of the Board of Trustees of the Maryland Agricultural Association, a meeting of said trustees was held last night at the Society's rooms, No. 69 West Fayette street, for the purpose of further considering the purchase of a site upon which to hold their annual exhibitions. There were present N. B. Worthington, of Anne Arundel county; William Devries, Thos. H. Mules, E. G. Ulery, Ezra Whitman, E. Law Rogers and Chas. M. Dougherty, of Baltimore city; Wm. H. Smith, of Caroline county; Gen. Anthony Kimmel, of Frederick county; John Merryman and Charles H. Nicolai, of Baltimore county; William B. Stephenson, of Harford county; Samuel K. George, Jr., of Howard county; A. B. Davis, of Montgomery county; Dr. George R. Dennis, of Somerset county, and E. L. F. Hardcastle, of Talbot county—sixteen in number. In addition, Mayor Banks and Messrs. Robb, Jillard and Dr. Krozer, of the City trustees, and Messrs. Geo. S. Brown and Edwin M. Greenway, of the committee appointed on the part of the merchants to solicit subscriptions, &c., were also present.

The trustees on the part of the city, being of the opinion that the meeting was a joint one, of the State and City trustees, according to their understanding of the adjournment of the joint meeting held on the 2d inst., of which latter meeting Dr. Krozer was the Vice-President, that gentleman, in the absence of the President, Governor Bowie, took the chair, and called the meeting to order. E. Law Rogers, Esq., Secretary of the State Board of Trustees, objected to calling the roll, upon the ground that the City trustees were not legally members of the present meeting, and had not authority to vote upon any subject brought before the corporators.

B. H. Waring, Esq., Secretary of the Association and Assistant Secretary of the last meeting, was about to call the roll, which gave rise to a lengthy discussion, during which considerable feeling was manifested. Upon the part of the State trustees it was contended that they could not legally recognize the right of the City trustees to vote upon questions submitted, while upon the other side it was contended that the meeting was a joint one, and therefore the City trustees should occupy the same position as that of the State trustees.

A number of the latter advocated harmony of action, and while they could not sit as one body, the desire was expressed that the City trustees would remain, and give expression to their opinion in reference to the matters brought up for discussion. Finally the City trustees retired and assembled at Eldon Hall, opposite, for consultation.

Upon motion of Mr. Smith, General Kimmel was then called to the chair, Mr. Rogers acting as secretary. The same gentleman made a motion that a committee be appointed to invite the trustees of the city to attend the meeting, and express by their separate vote their approval or disapproval of the measures voted upon. Here the question of the right of the City trustees to vote was again raised, and another lengthy discussion ensued. Finally a committee, consisting of Messrs. Smith, Stephenson and Merryman, was appointed to invite the City trustees to attend the meeting and participate, together with those representing the citizens, in the discussions that might arise. The committee, after waiting upon the City trustees, reported that said trustees respectfully declined to be present if not allowed to vote, but that they would remain in session and communicate their opinion of the ground selected by the State trustees, when action should be taken by the latter.

Mr. Davis, from the committee appointed at the last meeting to confer with a like committee of the merchants and others, to whom the subject of the selection and location of a proper site was referred, reported that a responsible and *bona fide* pledge and subscription to the funds of the association amounting to \$20,000 had been made, with a further pledge and assurance that whatever deficit may be found, after a wise and judicious selection of a site, and a careful and prudent expenditure of the present sum, would be made up and provided.

The committee further recommended the purchase of the property offered by Mr. Rob't Wylie, known as the Pimlico tract. The report was signed by five of the committee, viz: A. B. Davis, Wm. Devries, George S. Brown, E. M. Greenway and C. Oliver O'Donnell. The other member of the committee, Mr. Hardcastle, refused to attach his name to the report, stating that his objection to the Pimlico track was the difficulty in the way of access, &c.

Mr. Devries favored the Pimlico tract. He

said that in conversation with the president of the Pikesville Passenger Railway Company, chartered at the last session of the General Assembly, that gentleman had stated that said railroad could be put in operation as far as the Pimlico tract by October, and that sufficient accommodation could be afforded visitors.

Mr. Merryman read a letter from Mr. Tyson, president of the City Passenger Railway, from which he argued that a passenger railway could not furnish sufficient accommodations. After some further discussion, participated in by Messrs. Nicolai, Rogers, Davis and Smith, Mr. Merryman offered as a substitute for the whole subject that a committee be appointed to purchase the Herring Run property. A vote was taken upon the substitute, resulting as follows: Yeas—Messrs. Ulery, Merryman, Smith, Stephenson and Hardcastle—5. Nays—Messrs. Devries, Worthington, Mules, Rogers, Whitman, Dougherty, Nicolai, Kimmel, Davis, George and Dennis—11.

A vote was taken upon the acceptance of the report of the committee, and it was accepted by the same vote as the above.

Mr. Rogers then offered a resolution that the chairman appoint a committee of three to make the necessary arrangements with the parties owning the Pimlico property to consummate a purchase of the same. As a substitute, Mr. Hardcastle offered a resolution providing for the purchase of a tract of land on the Baltimore and Ohio Railroad, at a price not exceeding \$200 per acre, situated about four miles from the city, and belonging to Mr. Linthicum. It was rejected by a vote of yeas 6, nays 9.

Mr. Nicolai and others advocated the purchase of the property belonging to Gov. Bradford, situated about five miles from the city, on Charles street avenue, and Mr. N. proposed, as a substitute for Mr. Rogers' resolution, that this property be purchased. A vote was taken, resulting as follows: Yeas—Messrs. Mules, Ulery, Whitman, Merryman, Nicolai, Smith and Stephenson—7. Nays—Messrs. Worthington, Devries, Rogers, Kimmel, Dougherty, Hardcastle, George, Davis and Dennis—9.

The vote recurring upon Mr. Rogers' resolution to purchase the Pimlico tract, it was adopted by the following vote: Yeas—Messrs. Worthington, Devries, Mules, Whitman, Rogers, Dougherty, Smith, Kimmel, George, Davis and Dennis—11. Nays—Messrs. Ulery,

Merryman, Nicolai, Stephenson and Hardcastle—5.

The chair appointed Messrs. Devries, Rogers and Worthington as the committee to make the purchase.

A resolution, offered by Mr. Devries, was adopted instructing the executive committee to improve the ground when purchased, the same to be subject to the approval of the board of trustees.

Mr. Devries offered a resolution, which was adopted, that the citizens subscribing to the funds of the association are, and ought to be, entitled to a reversionary interest in such ground as may be purchased, in proportion to their respective amounts subscribed. During discussion on this, it was stated that the subscribers to the funds did not expect to have any control of the working of the association, but that in case the grounds purchased should be subsequently sold, they claimed a reversionary interest.

A committee, consisting of Messrs. Merryman, Nicolai and Smith, was appointed to wait upon the City trustees, and inform them of the action taken by the meeting. The committee reported that the City trustees had passed a resolution that, "their body not having been recognized in the adjourned joint meeting, they cannot give their sanction to the selection made." The meeting then adjourned.

The ground selected, known as the Pimlico tract, is understood to be about three miles and a half from the city limits, and is reached by way of the Reisterstown turnpike.

Seventeen-Year Locusts.

Prof. Fitch, in his report to the Assembly of New York, for the year 1855, remarking upon the seventeen-year locusts, says:

A fourth brood, and which has been the oftenest and most fully noticed of any, reaches from Pennsylvania and Maryland to South Carolina and Georgia; and what appears to be a detached branch of it, occurs also in the southeastern part of Massachusetts. It was observed as long ago as 1715, and its reappearance has been recorded seven times since—the last one of which was in the year 1851; it will consequently reappear in 1868.

The pupa of this locust emerges from the ground in the night time. Some of them leave their shells near the holes from which they emerge. Others crawl up fences and

bushes and trees, sometimes twenty feet, when fixing themselves by the feet, the thin, shell-like covering cracks open, and the enclosed insect withdraws itself, leaving the empty case where it was fixed.

The oak is the tree which this locust appears most to infest, for the purpose of depositing its eggs, and next to this, probably the apple tree. It also infests the hazlenut and the locust tree, and probably most of the deciduous trees, in the absence of the oak.

The full-grown insect attaches itself to the twigs of the trees, and inserts its ovipositor in an oblique direction through the succulent bark and albumen. The wound is so made as to form a sort of lid of its upper side, under which the eggs are deposited, sometimes to the number of sixteen or twenty. A number of wounds are often made on the same twig. As soon as the eggs are hatched, the worms, which are about .06 inch in length, eat their way into the pith of the twig. The twigs usually die at the point at which the eggs are inserted, and are broken off by the wind and fall to the ground. Mr. Thomas W. Morris speaks of having seen the tops of the forest trees in Pennsylvania and Ohio for upwards of a hundred miles, appearing as if scorched by fire, a month after this locust had left them. Many of the wounded limbs, however, survive the injury which they have received. If the twigs are cut off as soon as the leaves begin to wilt, the worm may often be found in the pith. The worm is of a yellowish white color, clothed with fine hairs; the eyes and claws of its fore legs are tinged with red. It has six legs, the front pair being much the largest. It is quite lively and active in its motions and drops from the limb to the ground, in which it immediately buries itself by means of its fore legs, which are admirably adapted for digging.—*New England Farmer*, April 18.

Since the issue of our last number these locusts have continued increasing, and we have reports of them as far South as Arkansas. No damage from them need be apprehended, except to the trees, as specified above, as the perfect insect is not an eater.—*Jour. of Ag.*

The locust made its appearance between Washington and Baltimore on Sunday morning, 31st of May, and on the 19th June are still singing their monotonous song: the trees just beginning to show the effects of their operations in depositing their eggs.—*Ed. Far.*

"Have we Rinderpest?"

The Monthly Report of the Department of Agriculture answers this question with a positive negative, and treats with something like contempt the opinions of those who are so unwise as to disturb our peace with fears of the rinderpest. Dr. Hiram Corson, of Montgomery Co., Pa., who is one of the persons "with the prefix of Dr." alluded to in the Report, takes care of himself as follows:

There is an article in the *Ohio Farmer* of last month, from the pen of J. R. Dodge, Statistician of the Agricultural Department at Washington, in which he gives vent to his indignation against certain writers who think they see a close relationship between pleuro-pneumonia, as it existed in Massachusetts, and Africa, and as it now exists in this country, and the cattle disease of England since 1865. In his paper, he tells us that J. Burdon-Sanderson, M. D., &c., &c., makes the disease "an essential or general fever, distinguished in its local manifestations by an alteration of the superficial structure of the skin and mucous membranes;" and so striking is this change, that he says, "cattle plague may be discriminated from all other diseases whatsoever, by the alterations of the *visible* mucous membranes generally, and particularly by those of the lips and gums."

Now, this is kind in Mr. Dodge, to let us know that this disease, so long shrouded in mystery, is only an essential fever, and that a glance at the gums and inside of the lips will enable us to distinguish it from "all other diseases whatsoever."

Next, he quotes Dr. Marcet, F. R. S., F. C. P., (greater titles than the "prefixing Dr., and the affix, V. S.") who shows "peculiar changes produced by the disease upon the blood, bile, milk and flesh,"—but not one word about the mucous membrane. He is followed by Dr. Murchison, F. R. C. S., &c., &c., who regards it as "the malady most resembling the human disease, small-pox;" for there is "an eruption of the skin, composed of vascular patches and sometimes pustules." He *thinks* "it is distinct from pulmonary murrain." Why need he be in any doubt about it? If he had turned up the lip, he could have seen at once, like Dr. Sanderson, the marks "discriminating it from all other diseases whatsoever."

Then comes Dr. Briston, F. R. C. P., who "classes it with diphtheria and small-pox"—though it is not quite either—nor yet "con-

tagious typhus of horned cattle;" nor is it "identical with enteric fever." Do, Mr. Dodge, tell us what Dr. B. thinks it is. He tells us what it *is not*. I will not follow the next authority—Lionel S. Beale, M. B., F. R. S.—with his glass of 2500 diameters; but will assure Mr. Dodge that if he will hand me the glass, I will show him "a highly congested state of the capillary vessels of many different textures and organs," in any animal dead from pleuro-pneumonia, which prevails near the city of Philadelphia; and yet this, Mr. Dodge says, "is the most remarkable of the morbid changes observed" by the great microscopist. I might further say, that I have carefully prepared reports, drawn up by an accomplished microscopist of Philadelphia, of observations made by himself and another experienced physician, on the organs of cattle dead from pleuro-pneumonia, in which even more remarkable changes were observed, than those given us by Beale. Our operators, too, are men of high-sounding titles, and, even without parading them, they are among the most laborious investigators of medical science in this or any other country.

Finally, Mr. D. gives the testimony of Prof. Gamgee, V. S., who says, "the cell growth, fatty and molecular disintegrations, desquamation and discharge of epithelial cells, are *typical* of this disease." Now, if Prof. Gamgee had examined the discharges in an ordinary diarrhea, or dysentery, he would have found the very same phenomena. They are not typical of any disease, for they occur in numerous affections.

Mr. Dodge also refers to a report, from the Royal Commission, published "in the Department Report of Agriculture, for 1865" It will perhaps be satisfactory to Mr. Dodge to know, that a careful comparison of the disease prevailing in Eastern Pennsylvania, with the disease described in that report by Professor Symonds, proves most conclusively that the two diseases are alike in every essential particular. They are propagated in the same way; the symptoms are precisely alike; the mortality is the same—the same both in the time and manner of death. During life they seemed to be identical. Do post-mortem examinations reveal the same changes of structure? Our disease is an affection of the pleura, the lungs, and the mucous membrane lining the air-passages. What the European disease is, we must gather from its history. The Sci-

entific Commission of France, appointed to investigate it, says: "For a long time it existed in many European countries, making partial inroads into the agricultural interests (under the name of rinderpest), but was not known as pleuro-pneumonia until the year 1789." Post-mortem examinations then revealed its pathological characters, and the unscientific name of rinderpest (only a Dutch name, which signifies cattle-plague, and just as applicable to any other disease of cattle), gave place to a name which indicates the seat of suffering. After 1789 this disease was introduced into Belgium by the father of the eminent veterinary surgeon, Wilhelm, and it still exists there under the name of exudative or contagious pleuro-pneumonia. From thence it was carried to England, about the year 1841, where it was always called by the same name, until the year 1865, when its great fatality revived the old name of "cattle-plague," or "rinderpest." But Dr. Smart tells us in his published report, that even in that terrible pestilence, "of all the cattle examined in England, two-thirds were affected with pleuro-pneumonia." And, after all this, Mr. Dodge rebukes those who see a resemblance in the two diseases.

In conclusion, he refers us to the history of the disease given by Professor Symonds, and published "in the Department Report of Agriculture for 1865," probably by Mr. Dodge himself. In that paper, Prof. S. says (of the eruption spoken of by Dr. Murchison): "There are no indications of any gaseous compounds in the tissues connecting the skin and flesh, nor any other evidence of decomposition of the tissues. In cases which recover there are no pustules observed, as forming on the skin, nor any falling off of hair, nor any ulcers of the eyes, nostrils, nor muzzle, in either extreme or prostrate cases." Where are the "small-pox" of Murchison, and "the alterations of the visible mucous membranes, and especially of the gums and lips," of Sanderson, gone now? They are myths,—Prof. Symonds cannot find them; and yet Mr. Dodge *hopes* "that local statements, based upon views utterly erroneous and unenlightened, may not continue to disturb the agricultural community."

I pray the philanthropic Mr. Dodge to allow those who live in an agricultural community, who have touched and handled the disease—whose opportunities of access to what has been published on the subject, are equal to his

own, and whose knowledge of disease is infinitely greater, to *hope* that he will cease to disseminate "erroneous and unenlightened views" on the subject of a disease so contagious and so fatal, that every farmer should be instructed how to protect his cattle from its ravages, in place of being lulled into a fatal security, propagated by one who has never seen a case of pleuro-pneumonia, and who, instead of visiting those sections of the country in which the disease abounds, that he might see the disease, and obtain reliable information to lay before the readers of the Journal, talks in his easy chair at Washington, and carps at those who labor to investigate it.—*Practical Farmer.*

Is Drainage Manure?

What are the effects of drainage? Thorough drainage deepens the soil. Of what use is it to plough deeply and manure heavily while the soil is full of water? The roots of plants will not go down into stagnant water. The elements of plant food are not all on the surface; many of them have been washed down by the rains; some of them are found in the decomposing rocks themselves. Take away the water and the roots will find them.

Drainage lengthens the seasons. In our climate this is an important point to be gained. If by drainage one or two weeks could be gained, it would be quite a relief to our backward springs, when there is so much to be done in so short a space of time.

Drainage increases the effect of the application of manure; the soil being drier is more easily worked fine; the manure is also more evenly distributed. The water, also, passing through the soil, carries fertilizing matter down to the roots of plants. When there is stagnant water, manure must decompose slowly, if at all, but let the water pass off, the air is admitted, and decomposition takes place.

What observing man is there who does not know that his crops are improved in quality by drainage? Sweet English grass and clover take the place of sedge and rushes.—*Agriculture of Mass., by C. L. Flint.*

Of all objects under the sun in this vain world, there is none that can be found more exalted, more noble, more God-like, than the heart of man; whereof God demands no other thing of thee, than thy heart.

SUNDAY READING.

'Tis a general fault, that the most common and frequent, the most obvious and conspicuous favors of God, the constant rising of the sun upon us, the descent of fruitful showers, the recourse of temperate seasons, the continuance of our life, the enjoyment of health, the providential dispensations of wealth, the competent means of livelihood, the daily protection from incident dangers, the helps of improving knowledge, obtaining virtue, becoming happy, and such like excellent benefits, we commonly little mind or regard, and consequently seldom return due thanks for them.

There is no doubt but *prayer* is needful daily, ever profitable, and at all times commendable. If it be for ourselves alone, 'tis necessary, and 'tis charitable when for others. Prayer should be the key of the day and the lock of the night. At night it is our covering; in the morning it is our armor; so at all times it defends us from the malice of Satan, our own subordinations and betrayings, the unequal weather the world assaults us with, and preserves us in the favor and esteem of heaven.

Faith is nothing else but the soul's venture. It ventures to Christ, in opposition to all legal terrors. It ventures on Christ, in opposition to all our own guiltiness. It ventures for Christ, in opposition to all difficulties and discouragements.

Presumption and despair are the two rocks 'twixt which all Christians ought to steer an even course, and so avoid the one as not to dash upon the other. 'Tis, perhaps, the greatest secret of the devil's art; he first inclines us to presume, and we no sooner see the danger of it, but he tempts us to despair.—Thus he commences; thus he finishes his work.

It happens, now and then, that He, to whom the winds and sea belong, is pleased to make them for a time so calm and quiet, that a man, who swims upon his plank with industry and courage, meets at length, by Providence, another vessel, better fitted than his own, and sails with much more comfort, much more joy, into the haven than he would ever have done, if he had never suffered shipwreck in a storm.

Respecting *amusements* in general, it would be well for all persons, and especially for those who yet retain the freshness and innocence of youth, to regard the sage counsel of Lactantius: "He that is studious of truth, he that is not willing to deceive himself, let him cast away those noxious and unfriendly pleasures which chain down the soul, as luxurious food subjugates the body. Let things true be preferred to things false; things eternal to things momentary; things useful to things agreeable. Let nothing be grateful to thy sight which thou mayest not justly and piously behold; nothing pleasant to thine ear, which doth not nourish thy soul and render thee a better man. True pleasure is the companion and associate of virtue. This is a pleasure not frail and fleeting, like the base pursuits of men imbruted and enlaved to the body; but solid, and perpetual, and delighting, without pause or intermission."

Whither, alas! do our passions lead us? How desperately does one darling sin engage into others. Deliver us, O Lord, in the first beginnings, and suffer not our faults to become strong and customary, lest we grow at length to despise reproof and hate our reprover. Herod knew John to be just, and yet kept him in prison. He "heard him gladly," yet cut off his head. Nothing is so embroiled as a wicked life; nothing so full of contradictions as a wicked conscience. Deliver us, O Lord, from darling sins, which keep us irrecoverably chained to hell, though the chain may seem never so long.

They are guilty of falsehood who say they are not conscious of the existence of a God. They say this to you, but not to themselves. They profess it in the daytime, but not at night. The consciousness of a Supreme Being is deep rooted in their hearts, and only with their very hearts can it be eradicated.

When the holy servants of God remove out of the body, the choirs of angels receive their souls unto their own side, unto the pure world, and so bring them unto the Lord.

Honor, instead of being a finer form of moral life, may be more truly described as the shadow, or ghost, of virtue deceased.

God hath ordained it, and so it is; all inordinate lust is its own punishment.

"Economy is Wealth,"—Franklin.

Why will people pay \$50 or \$100 for a Sewing Machine, when \$25 will buy a better one for all PRACTICAL purposes? Notwithstanding reports to the contrary, the subscribers beg to inform their numerous friends that the "FRANKLIN" and "DIAMOND" Machines can be had in any quantity. This Machine is a double thread, complete with Table, constructed upon entirely new principles, and DOES NOT infringe upon any other in the world. It is emphatically the poor man's Sewing Machine, and is warranted to excell ALL others, as thousands of patrons will testify.

AGENTS WANTED.—Machines sent to agents on trial, and given away to families who are needy and deserving. Address J. C. OTTIS & CO., Boston, Mass. jy-6t

Baltimore Markets, June 20, 1868.

COFFEE.—Rio, 13a17½ cts. gold, according to quality; Laguayra 17a18 cts., and Java 23½a24½ cts., gold.

COTTON.—We quote prices as follows, viz:

Grades.	Upland.	Gulf.
Ordinary.....	25a—	00
Good do.....	27a—	00
Low Middling.....	28a29	00
Middling.....	30a—	00

FERTILIZERS.—Peruvian Guano, \$50; California \$70; Rodundia Island \$30; Patapoco Co's \$60; Reese & Co's Soluble Pacific Guano, \$56; Flour of Bone, \$40; G. Ober's (Ketticwells) AA Manipulated, \$70; A. do. \$60; Ammoniated Alkaline Phosphate, \$55; Alkaline Phos. \$45; Baltimore City Company's Fertilizer, \$40; do., Flour of Bone, \$60; do., Ground Bone, \$45; do., Poudrette, \$25; Baugh's Raw-bone Phosphate, \$56; Baugh's Chicago Bone Fertilizer, \$46; Baugh's Chicago Blood Manure, \$50; Maryland Powder of Bone, \$46; Rhodes' Super-Phosphate, \$55; Lister's Bone Super-Phosphate \$55; Berger & Butz's Super-Phosphate of Lime, \$56; Andrew Coe's Super-Phosphate of Lime, \$60;—all per ton of 2,000 lbs.; Pure Ground Plaster, \$14.50— per ton, or \$2.50 per bbl. Shell Lime slaked, 6c., unslaked, 10c. per bushel, at kilns.

FLOUR.—Howard Street Super, \$9.00a10.25; High Grades, \$12.25a12.75; Family, \$12.50a13.50; City Mills Super, \$9.25a10.25; Baltimore Family, \$15.75.

Rye Flour and Corn Meal.—Rye Flour, \$9.25a9.50; Corn Meal, \$5.75.

GRAIN.—Wheat.—Good to prime Red, \$2.45a2.90; White, \$2.40a2.85.

Rye.—\$1.50a1.70 per bushel.

Oats.—Heavy to light—ranging as to character from 81 a92c. per bushel.

Corn.—White, \$1.10a1.14; Yellow, \$1.09a1.15 per bushel.

HAY AND STRAW.—Timothy \$20a22, and Rye Straw \$— a\$— per ton.

PROVISIONS.—Bacon.—Shoulders, 14½a00 cts.; Sides, 16½a17½ cts.; Hams, Baltimore, 20a22 cts. per lb.

SALT.—Liverpool Ground Alum, \$1.05a2.05; Fine, \$2.90 a\$3.00 per sack; Turk's Island, 50c.— cts. per bushel.

SEEDS.—Timothy \$2.37a2.62; Clover \$0.00a0.00; Flax \$2.60a2.70.

Tobacco.—We give the range of prices as follows:

Maryland.	
Frosted to common.....	\$3.75a 4.50
Sound common.....	5.00a 5.50
Middling.....	8.00a10.00
Good to fine brown.....	10.50a15.00
Fancy.....	17.00a25.00
Upper country.....	7.00a35.00
Ground leaves, new.....	4.00a13.00

Ohio.	
Inferior to good common.....	4.00a 6.00
Brown and greenish.....	7.00a 8.00
Medium to fine red and spangled.....	9.00a15.00
Fine spangled.....	15.00a20.00
Fine yellow and fancy.....	20.00a30.00

WOOL.—We quote: Unwashed, 28a31 cts.; Tub-washed, 40a45 cts.; Pulled —a— cts.; Fleece —a— cts. per lb.

CATTLE MARKET.—Common, \$5.00a5.50; Good to fair, \$5.50a6.50; Prime Beeves, \$7.50a9.50 per 100 lbs.

Sheep.—Fair to good sheared, 4a5½ cts. per lb., gross.

Hogs.—\$11.50a13.00 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by HEWES & WARNER, Produce and Commission Merchants, 18 Commerce street.

BALTIMORE, June 20, 1868.

BUTTER.—Western solid packed 20a25 and Roll 18a23; Glades, 23a25; Goshen—none here.

BEESWAX.—40a50 cts.

CURSES.—Eastern, 16½a18½; Western, —a—

DRIED FRUIT.—Apples, 6 to 8; Peaches, 8a10½.

EGGS.—24 cents per dozen.

FEATHERS.—Live Geese, 60 to 80 cents.

LARD.—Western, 18; City rendered, 19 cts.

TALLOW.—12a12½ cts.

POTATOES.—\$1.30 per bushel.

NEW ADVERTISEMENTS—JULY.

Agricultural Implements and Machinery—Thos. Norrie & Son.

Tobacco-Curing Apparatus—J. Weatherby and Sons.

Sampson Scale Co.—F. B. Loney & Co.

"Every Thing Nice"—E. McMurdy.

Apple Grinder—Robt. Butterworth.

Fertilizers—Lodi Manufacturing Company.

Sorgo Machines—Blymyer, Norton & Co.

Sorgo Hand Book—

Pumps—A. Reuter & Sons.

Swine Jewelry—E. Blair.

Wooden Water Pipe—J. A. Woodward.

Notices—Department Labor and Agriculture, Md.

Cabbage—Edw'd Burgess.

Sewing Machines—J. C. Ottis & Co.

Complete Herbalist—Dr. O. Phelps Brown.

A Remarkable Strawberry—J. B. Cline.

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